CONTENTS

TRADE NAME	MODEL	SET AND FOLDER No.
Admiral	17DX10, 11, 12 (Ch. 19B1), 121DX10 (Ch. 19C1), 121DX11 (Ch. 19F1A), 121DX12, 16, 17 (Ch. 19C1), 121DX12A, 16A, 17A (Ch. 19C1, 19F1), 121DX16L, 17L (Ch. 19K1), 221DX15, 16, 17, 26, 38 (Ch. 19C1), 221DX15A, 16A, 17A (Ch. 19C1, 19F1), 221DX15L, 16L, 17L, 26L (Ch. 19K1), 221DX26A (Ch. 19F1), 221DX38A (Ch. 19C1, 19F1), 222DX15 (Ch. 19H1) Tel. Rec.	210-2
Aircastle	652.327SA	210-3
Philco	53-800, 53-804	210-4
RCA Victor	2-S-10 (Ch. RC1111 & Audio Ch. RS141)	210-5
Rauland	3406, H, 3412, H, 3424, H	210-6
Regal	271	210-7
Regal	575	210-8
Sheraton	17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530 DX Series) Tel. Rec.	210-9
Sparton	230, 232, 239 (Ch. 5A10, A)	210-10
Sparton	5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 3 (Ch. 27D213), 5382B (Ch. 27D213-A)	210-11
Steelman	3RP1	210-12
Sylvania	172K (Ch. 1-508-1, -3), 172KU (Ch. 1-508-2), 172M (Ch. 1-508-1, -3), 172MU (Ch. 1-508-2), 175B (Ch. 1-508-1, -3), 175BU (Ch. 1-508-2), 175L, M (Ch. 1-508-1, -3), 175MU (Ch. 1-508-2), 176B (Ch. 1-508-1, -3), 176BU (Ch. 1-508-2), 176L, M (Ch. 1-508-1, -3), 176MU (Ch. 1-508-2), 177B (Ch. 1-508-1, -3), 177BU (Ch. 1-508-2), 177M (Ch. 1-508-1, -3), 177MU (Ch. 1-508-2), 178B (Ch. 1-508-1, -3), 178BU (Ch. 1-508-2), 178M (Ch. 1-508-1, -3), 178MU (Ch. 1-508-2) Tel. Rec., Prod. Chg. Bul. 70	210-1
Truetone	2D1344A, B (Ch. 21MS36C) Tel. Rec.	210-13
Webcor	B-135-1	210-14
Westinghouse	H-393T6 (Ch. V-2182-2)	210-15

PROPERTY OF
L. F. BLAN[illegible] SHIP
3024 MEA[illegible]
DENVER, CO[illegible]

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 IN SET 192

Ch.1-508-1 (Codes CO1 thru CO7)	Production changes in Sylvania Ch. 1-508-1 through Code CO7 and Ch. 1-508-2, Code CO1, are covered in Photofact Folder 9, Set 192. In later production the following changes were made.
Ch.1-508-1 (Code CO8)	COMPONENT CHANGE C89 was changed from a .22MFD, 200 volt, capacitor to a .22MFD, 400 volt capacitor.
Ch.1-508-1 (Code CO9)	TO ELIMINATE WHITE FLASHING IN PICTURE A .047MFD capacitor was added across R22 in the AGC line. A .22MFD capacitor was added from the tuner AGC line to ground.
Ch.1-508-1 (Code C10)	TO ELIMINATE BARKHAUSEN OSCILLATION A coil (Part #118-0010) was added in series with the plate lead of the Horizontal Output tube (V22).
Ch. 1-508-2 (Code CO2)	NEW TUNER PART NUMBER The VHF Tuner part number was changed from 323-0017 to 323-0031. This tuner includes the 40MC IF strip.
Ch.1-508-2 (Code CO3)	Production changes covered for Ch. 1-508-1, codes CO8 and CO9, above were included in Ch. 1-508-2, Code CO3.
Ch.1-508-2 (Code CO4)	Ch. 1-508-2, coded CO4, contains the coil which was added in Ch. 1-508-1, code C10, above.
Ch. 1-508-3	Chassis 1-508-3 has been added. This chassis is identical to Ch. 1-508-1 (VHF only) except a different tuner is used. The new tuner part number is 323-0018. A schematic and alignment chart for this tuner are given in this Production Change Bulletin. For Video IF and Sound Alignment, refer to Photofact Folder 9, Set 192.

SYLVANIA MODELS 172K (Ch. 1-508-1, -3), 172KU (Ch. 1-508-2), 172M (Ch. 1-508-1, -3), 172MU (Ch. 1-508-2), 175B (Ch. 1-508-1, -3), 175BU (Ch. 1-508-2), 175L, M (Ch. 1-508-1, -3), 175MU (Ch. 1-508-2), 176B (Ch. 1-508-1, -3), 176BU (Ch. 1-508-2), 176L, M (Ch. 1-508-1, -3), 176MU (Ch. 1-508-2), 177B (Ch. 1-508-1, -3), 177BU (Ch. 1-508-2), 177M (Ch. 1-508-1, -3) 177MU (Ch. 1-508-2), 178B (Ch. 1-508-1, -3), 178BU (Ch. 1-508-2), 178M (Ch. 1-508-1, -3), 178MU (Ch. 1-508-2).

TUNER ALIGNMENT CHASSIS 1-508-3

Remove the dummy converter tube and replace the original 6J6 in its socket.

Remove the second Video IF tube (V5) from its socket.

Disconnect the primary winding of L11 from pin 5 of 6CB6 (V4) and connect a 330Ω resistor from the B+ end of L11 to pin 5 of V4.

During oscillator alignment the use of two marker generators is required. Generator #1 (IF) is connected through a 2 or 3MMF capacitor to the grid of the Video IF Amplifier, V4.

Marker generator #2 (RF) is connected through a 2 or 3MMF capacitor across the sweep generator at the antenna terminals. If the sweep generator has a built-in marker it will be used for marker #2.

Since during tuner aligment it is necessary to switch the oscilloscope vertical input between the detector circuit connected to pin 5 of V4 (alignment point ◇F , Set 192-9) and the 10KΩ resistor connected to alignment point ◇1 , it is recommended that a single pole, double throw switch, mounted as close as possible to the vertical input terminals, be used to switch the oscilloscope input.

All connecting leads should be shielded and kept as short as possible.

(Continued on Reverse Side)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 120Ω Carbon Resistors	Across antenna leads with 120Ω in each lead.	213MC (10MC Swp)	211.25MC	13	Vert. Amp. thru detector (Fig. 8), to point (E). Low side to chassis.	A53	Set IF marker at 45.75MC for entire step. Adjust to make 45.75MC marker and RF video marker coincide on response curve.
		207MC (10MC Swp)	205.25MC	12		A54	
		201MC (10MC Swp)	199.25MC	11		A55	
		195MC (10MC Swp)	193.25MC	10		A56	
		189MC (10MC Swp)	187.25MC	9		A57	
		183MC (10MC Swp)	181.25MC	8		A58	
		177MC (10MC Swp)	175.25MC	7		A59	
		85MC (10MC Swp)	83.25MC	6		A60	
		79MC (10MC Swp)	77.25MC	5		A61	
		69MC (10MC Swp)	67.25MC	4		A62	
		63MC (10MC Swp)	61.25MC	3		A63	
		57MC (10MC Swp)	55.25MC	2		A64	

OSCILLATOR ALIGNMENT

The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

The sweep generator output lead should be terminated with is characteristic impedance, usually 50 ohms.

Set the fine tuning control to the mid-position of its range.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.	A49 A50 A51	Adjust for response curve of maximum amplitude and symmetrical response with markers as shown in Fig. 7.
"	"	213MC (10MC Swp)	211.25MC 215.75MC	13			Check for response similar to Fig. 7. If markers fall below 70% make slight compromise adjustment of A49, A50, A51, then check all other dchannels to see that they have not been seriously affected.
		201MC (10MC Swp)	199.25MC 203.75MC	11			
		195MC (10MC Swp)	193.25MC 197.75MC	10			
		189MC (10MC Swp)	187.25MC 191.75MC	9			
		183MC (10MC Swp)	181.25MC 185.75MC	8			
		177MC (10MC Swp)	175.25MC 179.75MC	7			
		85MC (10MC Swp)	83.25MC 87.75MC	6			
		79MC (10MC Swp)	77.25MC 81.75MC	5			
		69MC (10MC Swp)	67.25MC 71.75MC	4			
		63MC (10MC Swp)	61.25MC 65.75MC	3			
		57MC (10MC Swp)	55.25MC 59.75MC	2			
Direct	High side to pin 5 (grid) of 6J6. Low side to chassis.	43.25MC (10MC Swp)	42.1MC 45.75MC	Set tuner between any two channels	Vert. Amp. thru detector (Fig. 8) to point (E). Low side to chassis.	A9, A10* A52	Adjust for symmetrical over coupled response curve with markers as shown in Fig. 9. A9 and A52 determine position of 45.75MC marker. A10 determines band width or position of 42.1MC marker.

* For location of adjustments A9 and A10, See Photofact Set 192-9

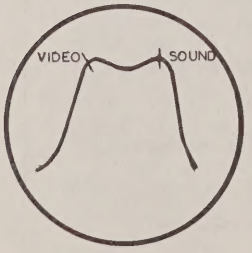


FIG. 7

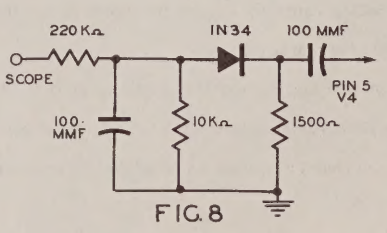
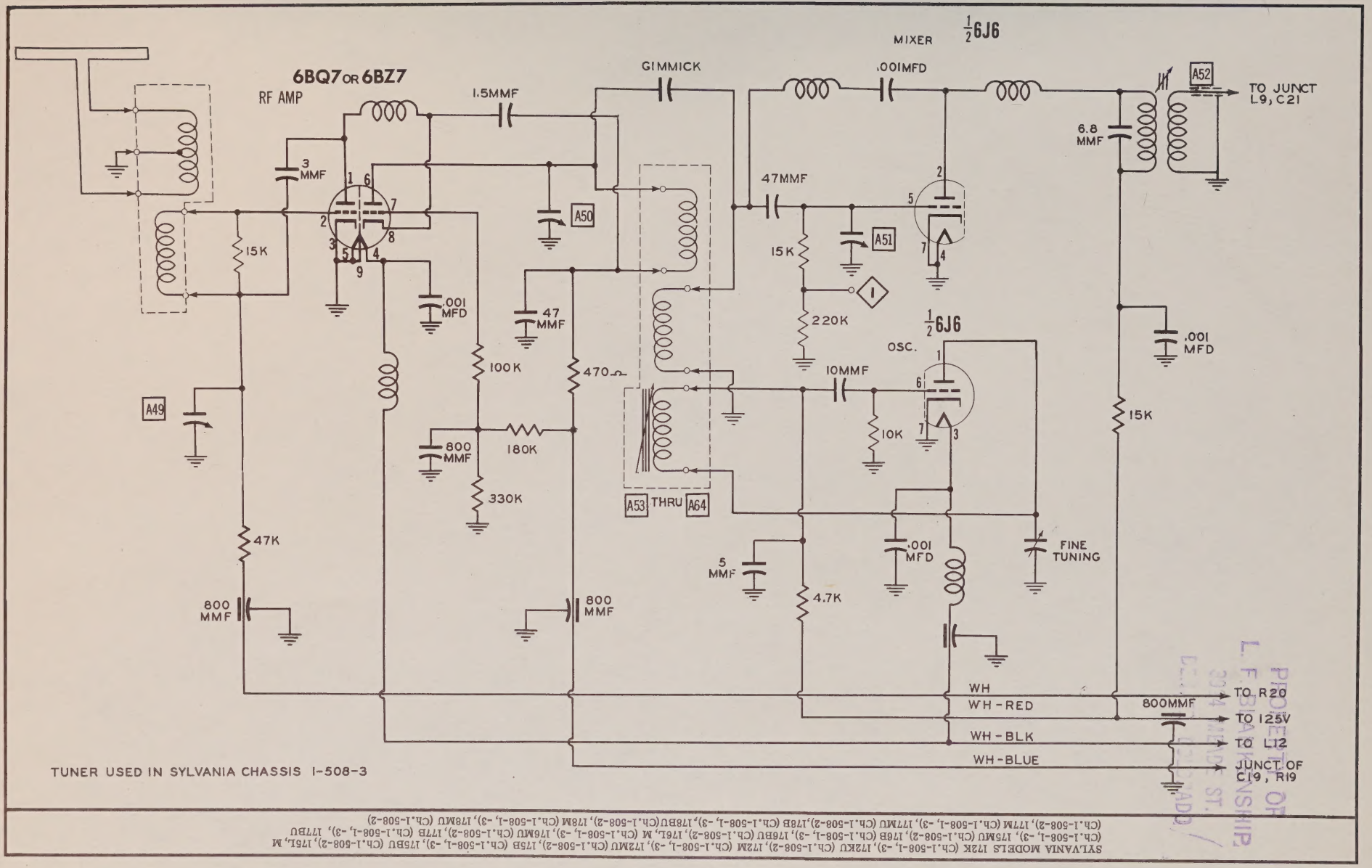


FIG. 8

FIG. 9



SYLVANIA MODELS 172K (Ch.1-508-1, -3), 172KU (Ch.1-508-2), 172M (Ch.1-508-1, -3), 172MU (Ch.1-508-2), 175B (Ch.1-508-1, -3), 175BU (Ch.1-508-2), 176L, M (Ch.1-508-1, -3), 176MU (Ch.1-508-2), 176TB (Ch.1-508-1, -3), 177M (Ch.1-508-1, -3), 177MU (Ch.1-508-2), 178B (Ch.1-508-1, -3), 178BU (Ch.1-508-2), 178M (Ch.1-508-1, -3), 178MU (Ch.1-508-2)

PROPERTY OF
L. F. BAKKENSHIP
304 MAIN ST.
DEL. [illegible]

PHOTOFACT* Folder

*TRADE MARK

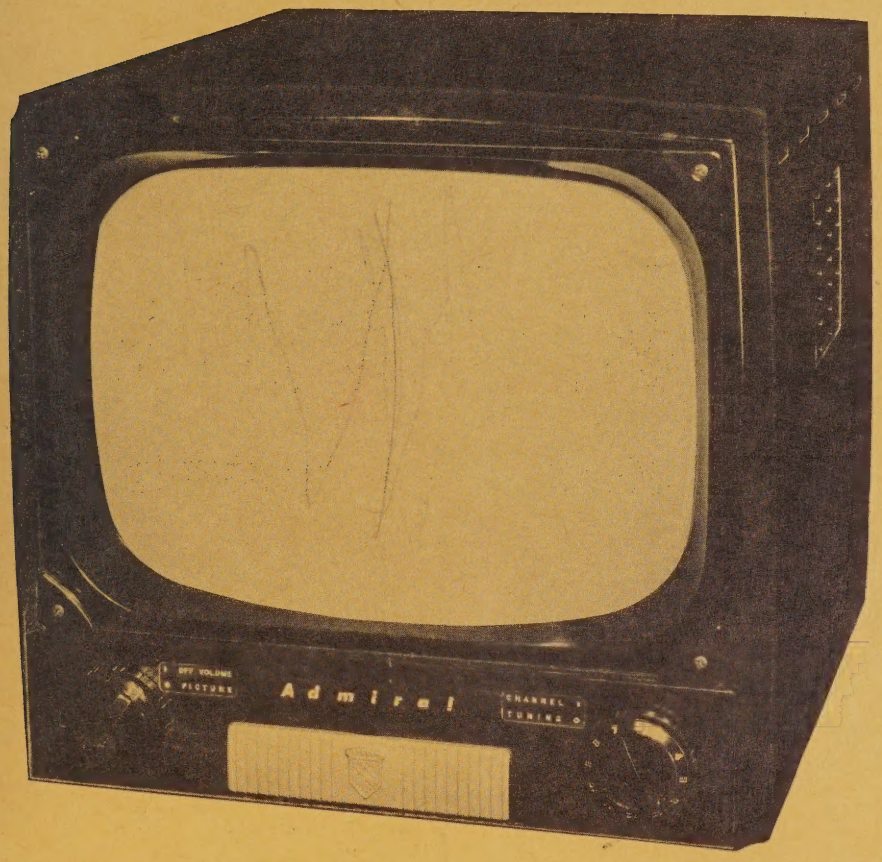
ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

PROPERTY OF
OWNERSHIP

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 17DX12

ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

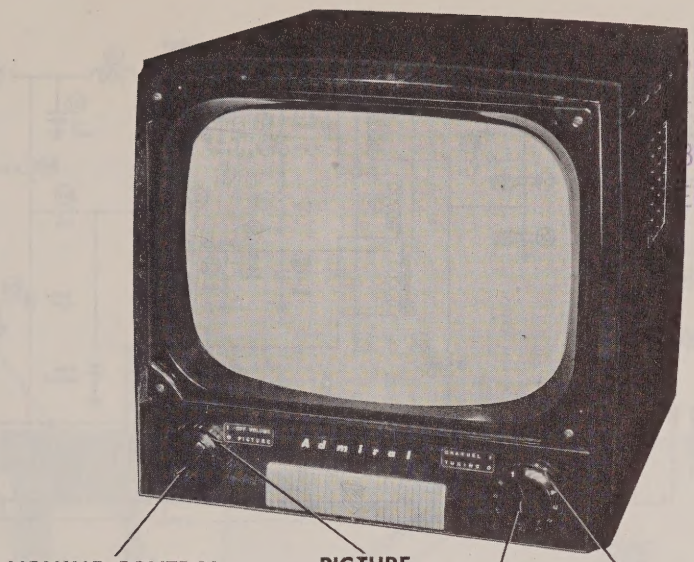
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7–53 SET 210 FOLDER 2

PHOTOFACT* Folder
*TRADE MARK

ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

PROPERTY OF
. BLANKENSHIP
3924 MEADE ST.
ENVER, COLORADO



ADMIRAL MODEL 17DX12

TRADE NAME	Admiral	MODELS	CHASSIS
		17DX10, 17DX11, 17DX12	19B1
		121DX10	19C1
		121DX11	19F1A
		121DX12, 121DX16, 121DX17	19C1
		121DX12A, 121DX16A, 121DX17A	19C1, 19F1
		121DX16L, 121DX17L	19K1
		221DX15, 221DX16, 221DX17 221DX26, 221DX38	19C1
		221DX15A, 221DX16A, 221DX17A	19C1, 19F1
		221DX15L, 221DX16L, 221DX17L 221DX26L	19K1
		221DX26A	19F1
		221DX38A	19C1, 19F1
		222DX15	19H1

MANUFACTURER Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
TYPE SET Television Receiver
TUBES Nineteen
POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.56 Amp. @ 117 Volts AC
TUNING RANGE- Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Intercarrier)

INDEX

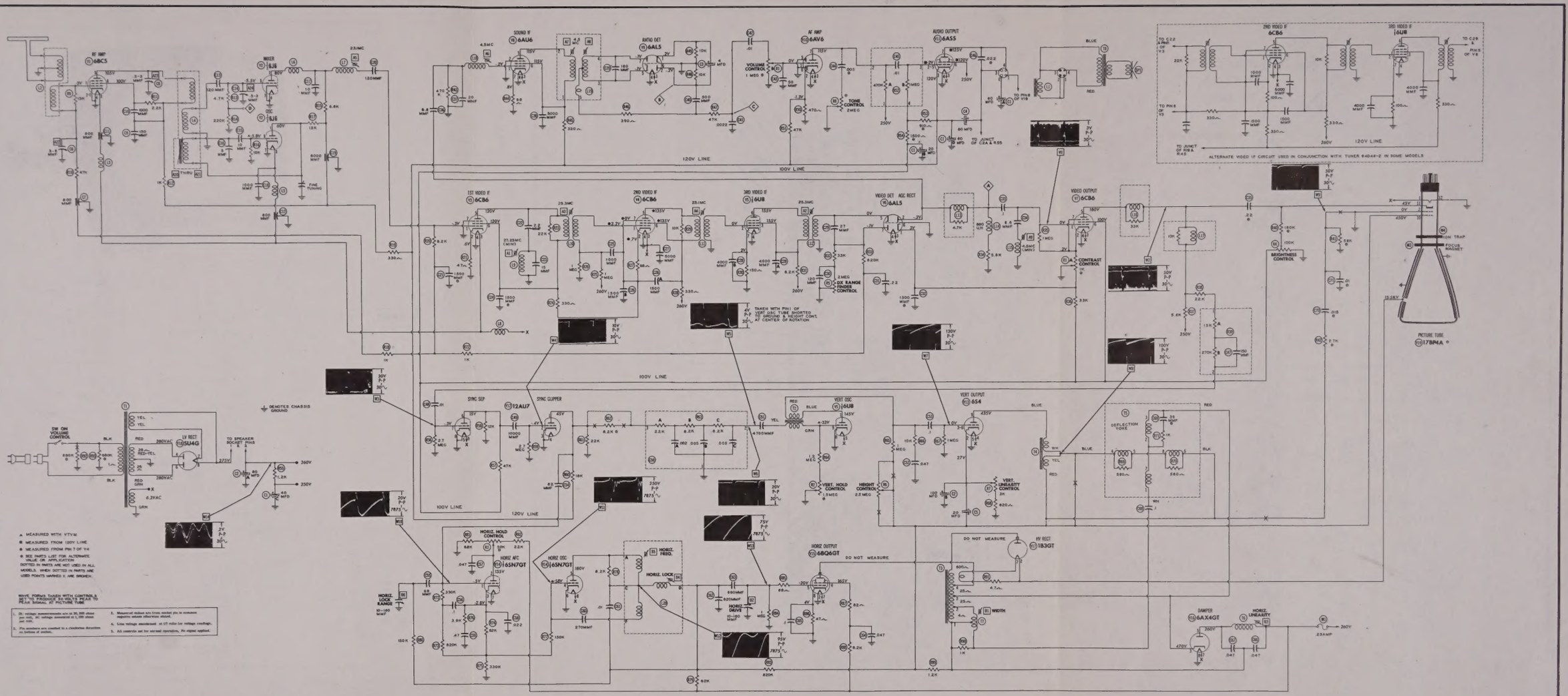
Alignment Instructions 6, 7
Disassembly Instructions 18
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
Cabinet-Rear View 11
Capacitor and Alignment Identification 4,9
Chassis-Top View 3
RF Tuner 10
Photographs (Cont)
Resistor and Inductor Identification 19, 20
Resistance Measurements 8
Servicing in the Field 18
Schematic (Alternate Tuner) 17
Scheamtic (TV) 2
Trouble Shooting Aids 12, 17
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

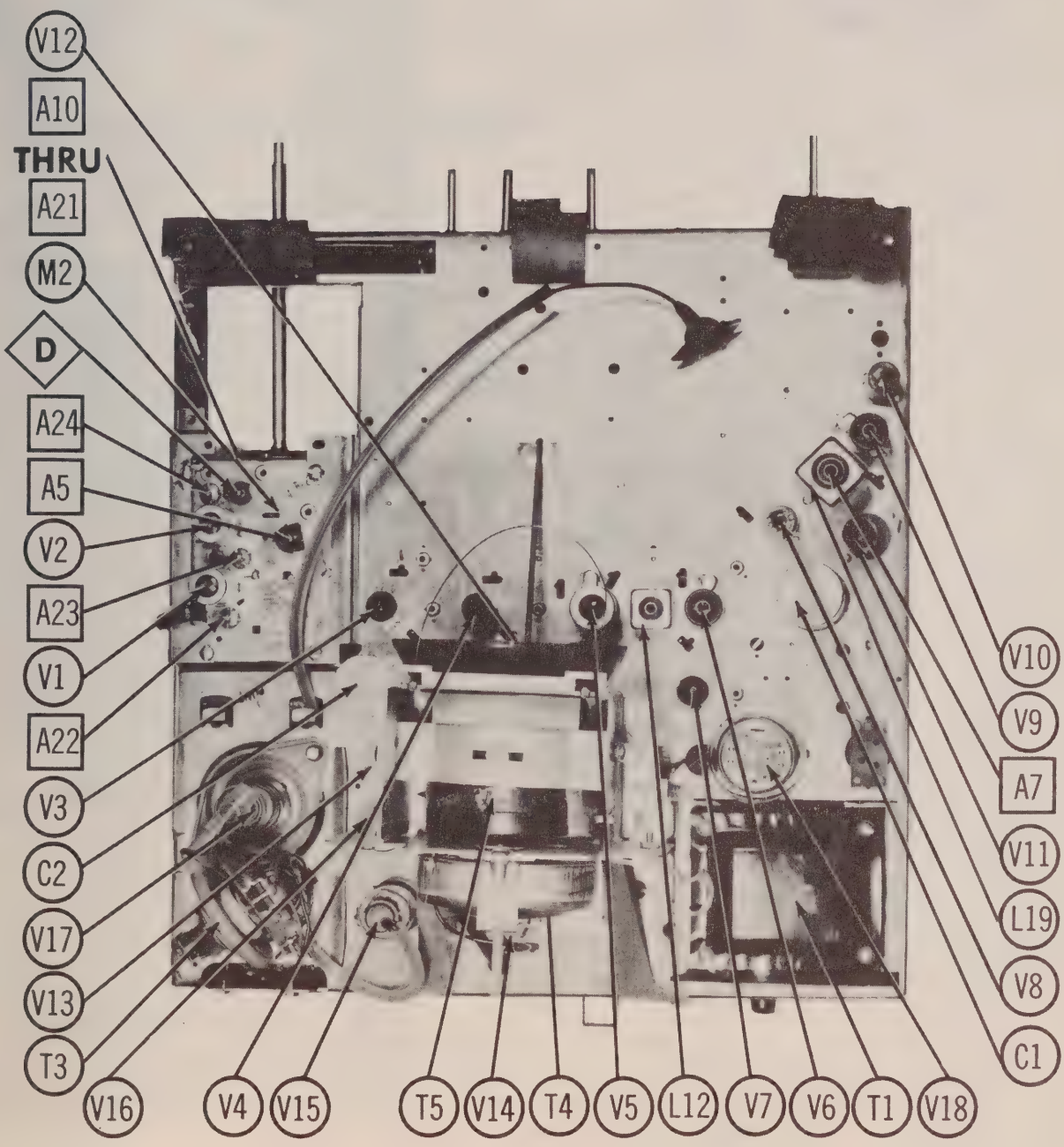
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7 –53 SET 210 FOLDER 2

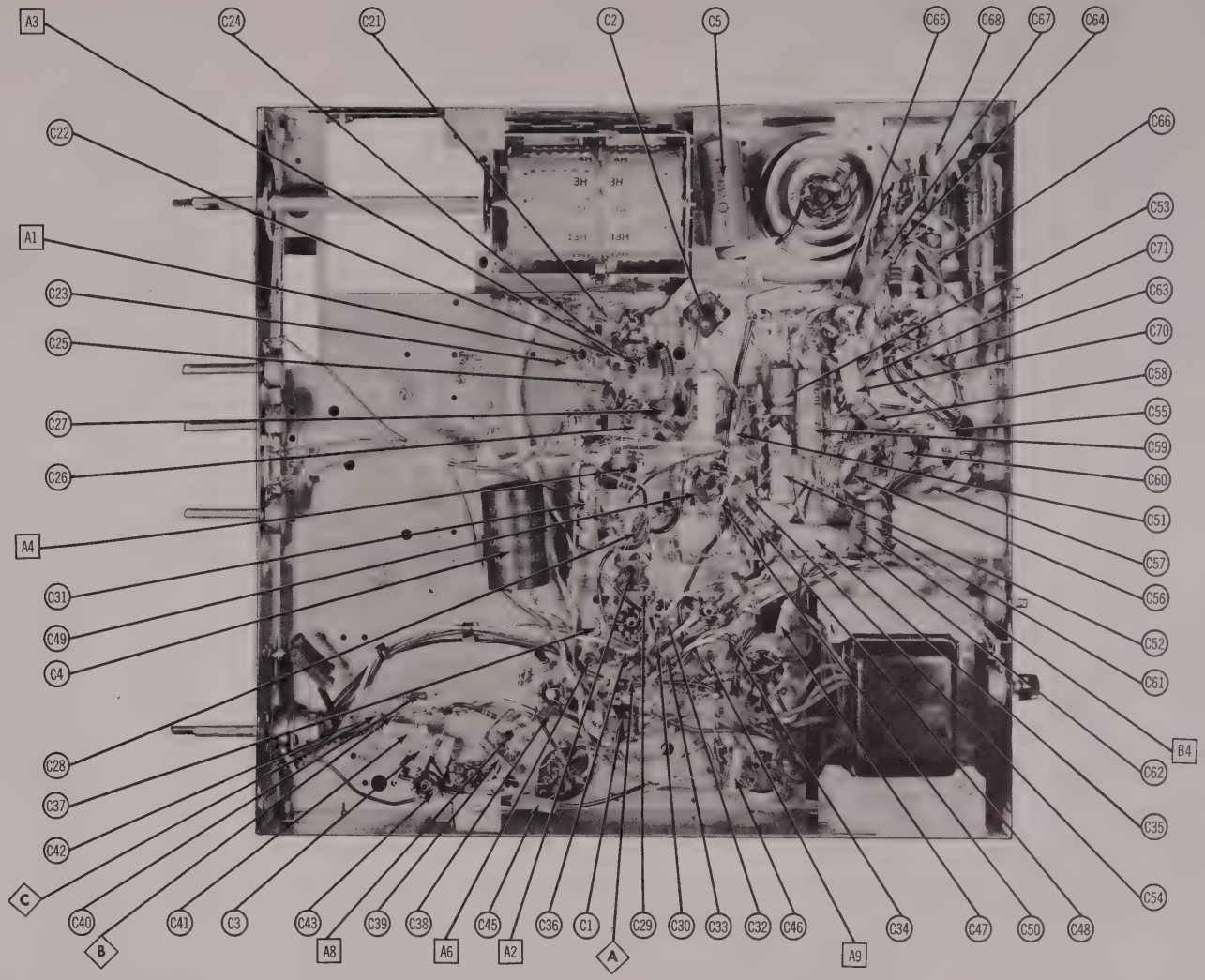
ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1


RF AMP V1 6BC5
MIXER V2 6J6
OSC V3 6J6
SOUND IF V8 6AU6
RATIO DET V9 6AL5
AF AMP V10 6AV6
AUDIO OUTPUT V11 6AS5
1ST VIDEO IF V3 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6U8
VIDEO DET AGC RECT V6 6AL5
VIDEO OUTPUT V7 6CB6
SYNC SEP V12 12AU7
SYNC CLIPPER
VERT OSC V9 6U8
VERT OUTPUT V13 6S4
HORIZ OSC V10 6SN7GT
HORIZ AFC
HORIZ OUTPUT V12 6BQ6GT
HV RECT V17 1B3GT
DAMPER V16 6AX4GT
HORIZ. LINEARITY
LV RECT V15 5U4G
PICTURE TUBE V18 17BP4A
2ND VIDEO IF 6CB6
3RD VIDEO IF 6U8
ALTERNATE VIDEO IF CIRCUIT USED IN CONJUNCTION WITH TUNER 940A4-2 IN SOME MODELS
120V LINE
100V LINE
SW ON VOLUME CONTROL
TO SPEAKER SOCKET PINS
CONTRAST CONTROL
BRIGHTNESS CONTROL
ION TRAP
FOCUS MAGNET
DEFLECTION YOKE
VERT. HOLD CONTROL
HEIGHT CONTROL
VERT. LINEARITY CONTROL
HORIZ. HOLD CONTROL
HORIZ. LOCK RANGE
HORIZ. FREQ.
HORIZ. LOCK
HORIZ. DRIVE
WIDTH
DX RANGE FINDER CONTROL
VOLUME CONTROL
TONE CONTROL
DO NOT MEASURE
CHASSIS GROUND
A MEASURED WITH VTVM.
B MEASURED FROM 120V LINE.
C MEASURED FROM PIN 7 OF V4
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
1. DC voltage measurements are at 30,000 ohms per volt, AC voltages measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

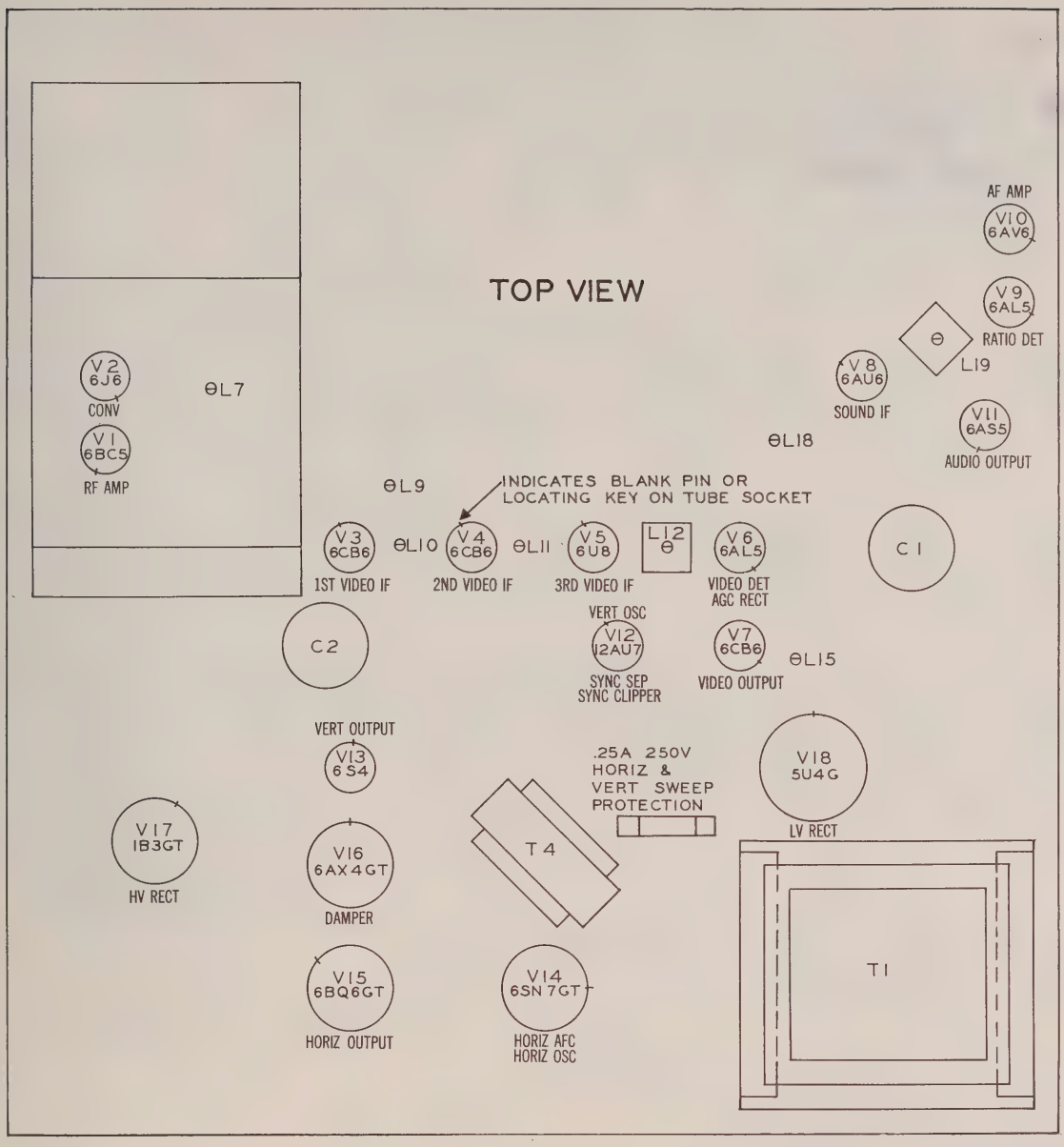


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V18

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster -V2, V3, V4, V5, V6, V11
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V9
Has pic, no sound - V8, V9, V10, V11

SYNC FAILURE
No vert. sync - V5, V12
No horiz. sync - V12, V14.
No vert. or horiz. sync - V12

SWEEP FAILURE
No raster, has sound - V14, V15, V16, V17, V19, Fuse (M1)
No vertical deflection - V5, V13
Poor vert. linearity or foldover -V5, V13
Poor horiz. linearity or foldover - V14, V15, V16
Narrow picture - V14, V15, V16, V17, V18
Vert. off freq. - V5, V12
Horiz. off freq. - V12, V14

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C21. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	27.25MC (Unmod)	Any	DC probe to point ◇A Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	25.3MC	"	"	A2, A3	Adjust for maximum deflection.
3.	"	"	23.1MC	"	"	A4, A5	Adjust for maximum deflection. Repeat step 1.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 22.0MC 24.3MC 25.0MC 25.75MC 27.25MC	Any	Vert. Amp. to point ◇A. Low side to chassis.		Check for response similar to Fig. 1. If necessary retouch A2 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to pin 2 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B Common to chassis.	A6, A7	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point ◇C Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.01MFD	High side to pin 2 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point ◇B. Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C3. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
6.	"	"	"	"	"	Vert. Amp. to point ◇C. Low side to chassis.	A8	Reconnect capacitor C3. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to pin 2 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B Common to chassis.	A9	Connect a 10MMF capacitor from pin 5 of V7 to pin 7 of V8. Adjust A9 for MINIMUM deflection. Remove the 10MMF capacitor from V7 and V8.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect bias battery as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point ◇A. Low side to chassis.	A10	Adjust to place video marker at 50% on high frequency slope of IF fresponse curve as in Fig. 4.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A11	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A12	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A13	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A14	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A15	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A16	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A17	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A18	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A19	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A20	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A21	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect bias battery as under Video IF Alignment.
If unable to obtain response curve of sufficient amplitude, remove the battery and connect a short across C21.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.	A22, A23, A24	Adjust for curve of maximum amplitude of maximum amplitude with flat top and band width as in Fig. 5.
10.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 5. If markers fall below 70% on any channel, make slight compromise adjustments of A22, A23 and A24 with channel switch set to that channel then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

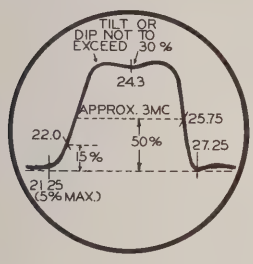


FIG. 1

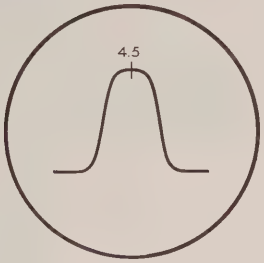


FIG. 2

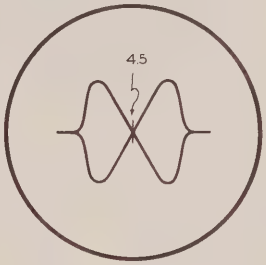


FIG. 3

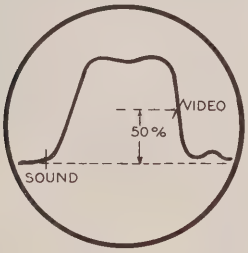


FIG. 4

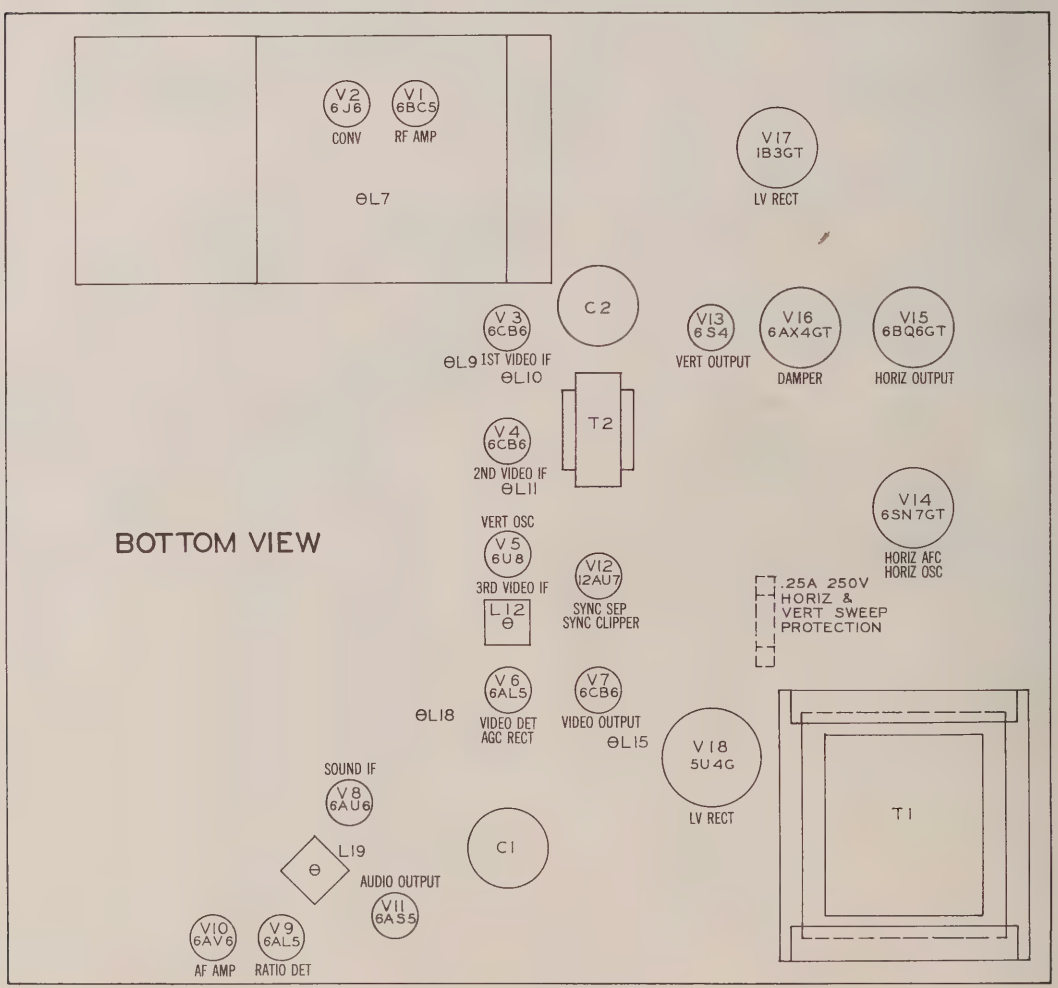
FIG. 5

ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

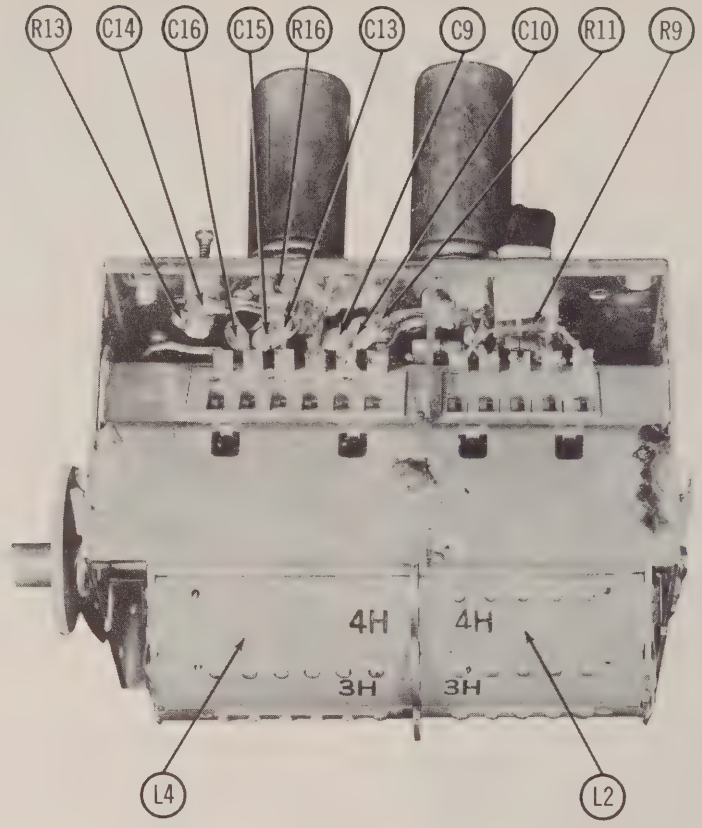
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	1.9Meg	0Ω	.1Ω	0Ω	ǂ1.3KΩ	ǂ3.5KΩ	0Ω		
V 2	6J6	ǂ15.3KΩ	ǂ7.1KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6CB6	1.9Meg	47Ω	.1Ω	0Ω	¶330Ω	¶330Ω	0Ω		
V 4	6CB6	600KΩ	¶68Ω	.1Ω	0Ω	†407Ω	†407Ω	¶0Ω		
V 5	6U8	♦1.8Meg	.4Ω	†8.3KΩ	0Ω	.1Ω	†8.3KΩ	150Ω	0Ω	1.7Meg
V 6	6AL5	990Ω	5.6KΩ	.1Ω	0Ω	.4Ω	0Ω	1 Meg		
V 7	6CB6	1 Meg	8Ω	.1Ω	0Ω	†5.7KΩ	ǂ2.4KΩ	8Ω		
V 8	6AU6	470KΩ	0Ω	.1Ω	0Ω	ǂ330Ω	ǂ330Ω	68Ω		
V 9	6AL5	10KΩ	10KΩ	.1Ω	0Ω	INF	0Ω	INF		
V 10	6AV6	50Ω	470Ω	.1Ω	0Ω	0Ω	0Ω	†470KΩ		
V 11	6AS5	10.8KΩ	ǂ1 Meg	.1Ω	0Ω	ǂ1 Meg	†1.3KΩ	†370Ω		
V 12	12AU7	ǂ13KΩ	2.7Meg	0Ω	0Ω	0Ω	ǂ17KΩ	2.7Meg	0Ω	.1Ω
V 13	6S4	INF	2KΩ	1Meg	1Ω	0Ω	1 Meg	INF	INF	♦2.3KΩ
V 14	6SN7GT	1.5Meg	†24KΩ	410KΩ	480KΩ	†82KΩ	0Ω	0Ω	.1Ω	
V 15	6BQ6GT	†8.2KΩ	0Ω	†77Ω	†8.3KΩ	1 Meg	†82KΩ	.1Ω	47Ω	Top Cap ♦25Ω
V 16	6AX4GT	♦1.2KΩ	INF	1 Meg	INF	†92Ω	♦3.9KΩ	.1Ω	0Ω	
V 17	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ♦625Ω
V 18	5U4G	†6.9KΩ	110KΩ	†30KΩ	26.2Ω	INF	24.5Ω	.1Ω	110KΩ	
V 19	17BP4A	.1Ω	56KΩ	Pin 10 ♦1.2KΩ	Pin 11 200KΩ	Pin 12 0Ω				

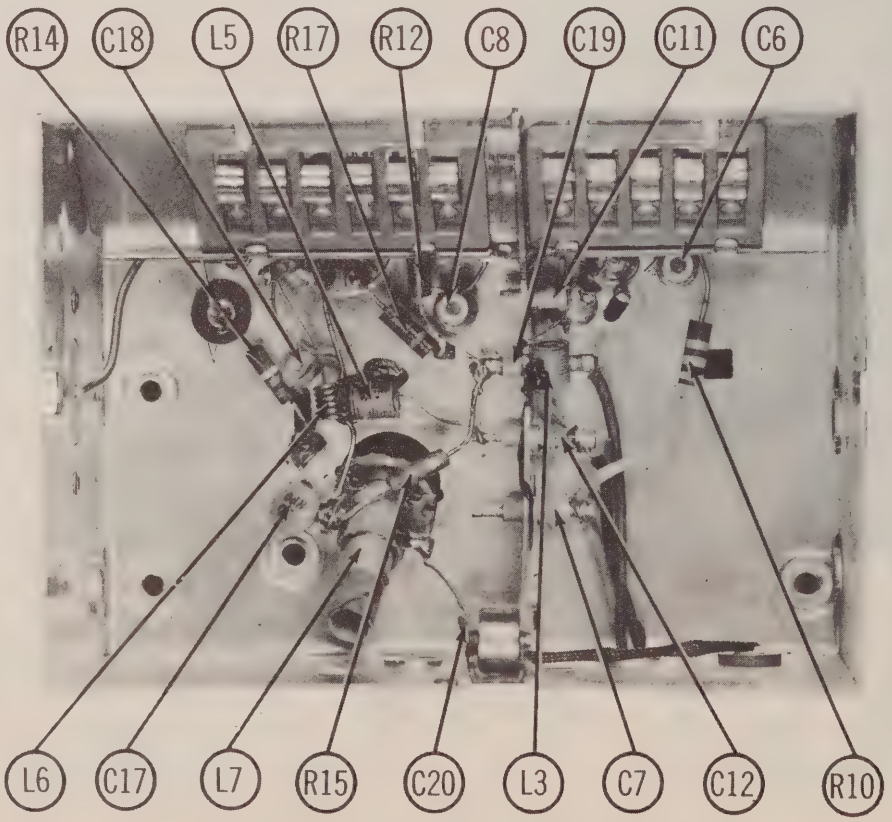
† MEASURED FROM PIN 8 OF V18.
ǂ MEASURED FROM 120 VOLT LINE.
♦ MEASURED FROM PIN 3 OF V16.
¶ MEASURED FROM PIN 7 OF V4.



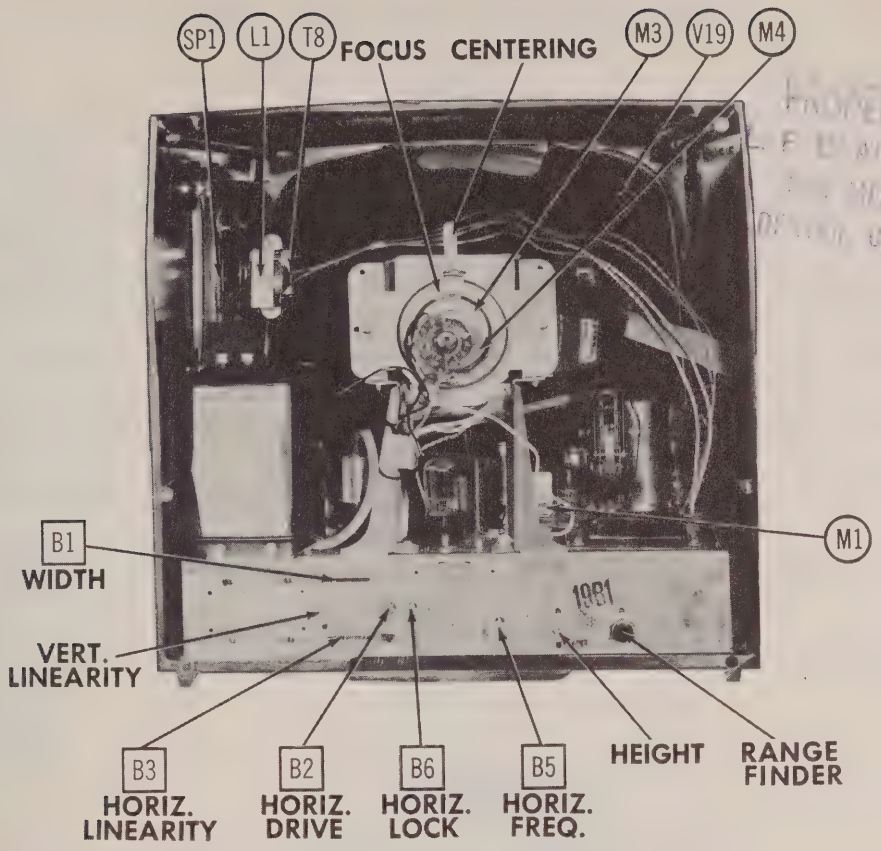
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern. The DX range finder control should be properly set before proceeding with the horizontal adjustments.
Set the contrast control for normal contrast.

DX RANGE FINDER ADJUSTMENT
In normal signal strength areas the DX range finder control will usually be set at "0" position. In intermediate areas a setting from 10 to 150 may prove satisfactory and in fringe areas position 150 to 300 may give best results. In weak signal-high noise level areas adjust for minimum snow in the picture.

Adjust as follows:
1. Tune in strongest TV signal available.
2. Set the contrast control fully clockwise.
3. Starting from "0" position turn DX range finder control clockwise for best contrast with minimum snow in the picture.

Check for bending of vertical objects in the picture and unstable sync when switching from channel to channel and make slight readjustment, if necessary, to correct these symptoms.

HORIZONTAL OSCILLATOR ADJUSTMENT
If necessary make width, drive and linearity adjustments before proceeding.
Adjust width slug (B1) for a picture slightly wider than necessary to fill the picture mask horizontally. Adjust the horizontal drive trimmer (B2) counter clockwise as far as possible without the presence of vertical white lines in the picture. Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.
Connect the high side of an oscilloscope through 10MMF to terminal "C" or "2" on L20. Connect the low side to chassis.
Adjust the horizontal lock slug (B4) for a waveform on scope as in Fig. 6 with broad and narrow peaks of equal height. If necessary during adjustment of B4 keep the picture in sync by adjusting the horizontal frequency slug (B5). Remove the oscilloscope from L20.
Turn the horizontal hold control fully counter clockwise and momentarily interrupt the signal by turning off channel and back again.
If the picture remains in sync adjust B5 slightly until the picture goes out of sync and several bars sloping down to the left appear on the screen. Slowly turn the horizontal hold control clockwise and note the least number of bars appearing just before the picture locks into sync.
If more than 3 bars are present adjust the horizontal lock range trimmer (B6) slightly clockwise. If less than 3 bars are present adjust B6 counter clockwise until 3 bars are present at sync pull in point.
With the picture centering lever, move the picture to the right so that the blanking bar is visible at the left side of the picture.
Adjust B5 to move the picture to the right until the blanking bar begins to jitter or wobble. Then turn B5 in the opposite direction until blanking bar moves off screen at the left, leaving the picture in sync.
Recenter the picture with the centering lever.

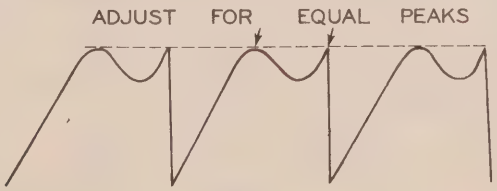


FIG.6

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Follow procedure outlined under loss of high voltage.

INSUFFICIENT SWEEP

Check by substitution V14, V15, V16, V17 and V18.
Check amplitude of waveform W-13.

If Low	If Correct
Check components of V14 and coupling network between V14 and V15.	Check components of V16 and V17, particularly C64, T3 and T7.

DRIVE LINES

If drive control does not correct this, substitute V15 and V16. Check components, especially C62, C66 and C67. Also, T3.

COMPRESSED AT LEFT SIDE

Substitute V16 and check T3, T6 and other components.

FOLDS

Substitute V15 and V16. Check T3 and T6. Check associated components. Check T5.

VERTICAL

LOSS OF SWEEP

Check by stubstitution V5 and V13. Check waveform W7.

If Unsatisfactory	If Satisfactory
Check T2 and other components of vertical oscillator.	Check T4, T5 and coupling network between V5 and V13.

INSUFFICIENT SWEEP

Follow procedure outlined under loss of vertical sweep.

COMPRESSED AT BOTTOM

Substitute V13, Check C2B for open, C5 for leaking condition.

COMPRESSED AT TOP

Substitute V13. Check C53 and other components of vertical output including T4.

WILD VERTICAL OSCILLATOR (Fig. 1)

Fig. 1 illustrates the results of C52 being open.

FOLDS

Substitute V13 and check T4 and T5B.

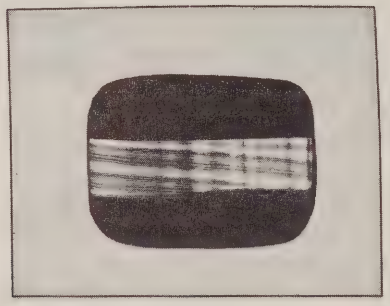


Fig. 1. Wild Vertical Oscillator
See Vertical Sweep

SYNC

HORIZONTAL

LOSS OF SYNC

Substitute V12 and V14. Check waveform W10

If Unsatisfactory	If Satisfactory
Check components of V12 and grid circuit of V14.	Substitute for C60. Check C56. for short or open. Check C57 for short. Check value of R77. Check lead dressing in horizontal oscillator circuit.

CRITICAL SYNC

Follow procedure outlined under loss of horizontal sync.

PULLING PICTURE

Substitute V14, Check components particularly C57.

VERTICAL

LOSS OF SYNC

Check by substitution V5, V12 and V13. Check waveform W5.

If Unsatisfactory	If Satisfactory
Check components of V12 and integrator	Check T2 and other components of V5B. Check coupling network V5 and V13.

CRITICAL SYNC

Substitute V5, V12 and V13. Follow procedure outlined under loss of sync.

TRIGGERING

Substitute V5. Dress filament leads away from grid lead and components of V5B.

VIDEO

SOUND BARS

Check adjustment of A9 (4.5MC Trap). Check setting of local oscillator and alignment of IF stages.

POOR RESOLUTION

Check alignment of Video IF stages. If this does not correct trouble, substitute Video IF tubes and check circuit components.

SMEAR

Check R37 for change in value. Check L16 for open.
Check coupling capacitor C31 by substitution. Check Video Detector and IF stages for overloading.

ONE WIDE BLACK BAR ACROSS PICTURE

Check tuner, Video IF, detector and Video Output tube for filament to cathode leakage.

POOR CONTRAST

Check amplitude of waveform W1.

If Insufficient	If Sufficient
Substitute V3, V4, V5 and V6. Check alignment of IF stages.	Check waveform W2.

Check waveform W2.

If Insufficient	If Sufficient
Substitute V7 and check associated components. Check C35 for open.	Check picture tube and R40.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ADMIRAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	lst. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp. + Vert. Oscillator	6U8	6U8	9AE	
V6	Video Detector-AGC Rectifier	6AL5	6AL5	6BT	
V7	Video Output	6CB6	6CB6	7CM	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6AS5	6AS5	7CV	
V12	Sync Separator-Sync Clipper	12AU7	12AU7	9A	
V13	Vert. Output	6S4	6S4	9AC	
V14	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V15	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V16	Damper	6AX4GT	6AX4GT	4CG	
V17	HV Rectifier	1B3GT	1B3GT	3C	
V18	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: ADMIRAL PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V19A	17BP4A	17BP4A		12D	① Circuit changes necessary
		17BP4 ①		12D	
		17HP4 ①		12C	
		17RP4 ①		12C	
B	20DP4A	20DP4A		12D	
C	21WP4 21WP4X	21WP4		12D	
D	21EP4A	21EP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	350	67C15-23	AFH3-29		CO23			TVL-4609	
B	20	150								
C	■40	350		PRS250/30-30		BR6025				
D	▲60	250								
C2A	▲80	350	67C15-22	AFH3-142		C109		FP375	TVL-3722	
B	▲100	50								
C3	4	50	67A4-9	PRS150/4		BR550		TC30	TVA-1303	
C4	80	350	67C15-64	AFH1-42		XA011		FP138	TVL-1630	
C5	20	475	67A21-1	PRS500/16		BR2050A		TC83	TVA-1804	
C6	3-9		98A45-96		829-10					
C7	800		94C37-90	CN-1-001	MFT-1000				503C-D1	
C8	.5-3		98A45-23		829-3			CT565A		
C9	150			BPD-00015	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C10	1000		98A45-24	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C11	800		94C37-90	CN-1-001	MFT-1000				503C-D1	
C12	800		94C37-90	CN-1-001	MFT-1000				503C-D1	
C13	120			BPD-00012	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C14	.5-3		98A45-23		829-3			CT565A		
C15	10		98A45-64	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C16	5		94D47-52	SI5N750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C17	10		98A45-64	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	1000		98A45-24	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C19	800		94C37-90	CN-1-001	MFT-1000				503C-D1	
C20	120			BPD-00012	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C21	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	Note 1
C22	2.2		65C6-86							
C23	15		65C6-50	SI15NP0	TCZ-15		NP0K-150		5TCC-Q15	
C24	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	Note 1
C25	1000		65C6-41	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26A	1500		65A17-2	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C27	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C28A	4000		65A17-1	BPD-2X004	DD-2-502	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000									
C29	27		65C6-87							
C30	120		65C6-66	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C31	.22	200	64B9-5	P488-22		PTE4P22		PT4025	2TM-P22	
C32	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	Note 1
C33	.1	200	64B9-7	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C34	6.8		65C6-71	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C35	.22	400	64B9-5	P488-22		PTE4P22		PT4025	4TM-P22	Note 2
C36	6.8		65C6-71	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C37	20		65C6-51	SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C38	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C39	180		65C6-59							
C40	500		65C6-6	SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C41	.0022	600	64B9-17	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C42	.01	400	64B9-13	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C43	50		65C6-4	SI47N750	TCN-50		N750K-500	NT-5447	5TCU-Q47	
C44	.005	600	64B9-15	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	Note 3
C45	.01		♦63B6-5	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C46	.022	400	64B9-11	P488-022	DD-203	PTE4S22		PT4122	4TM-S22	Note 2
C47	150		†63B6-4	SI150	†PC-178	TM5T15	GP2K-151	UC-5315	5GA- T15	
C48	.01	400	64B9-13	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C49	10000		65C10-3	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C50A	.002		P688-002	P688-002	DTE6D2		DT622		
B	.005	}	‡ 63B6-2	P688-005	DTE6D5	‡1405-01	DT625	} ‡10IC1	
C	.005			P688-005	DTE6D5		DT625		
C51	4700	500	65B21-473	1464-005	DDE505		MCB465	MS-25	
C52	.047	600	64A2-14	P688-047	DF-503		DTE647	67M-547	
C53	.1	600	64B9-7	P688-1	DF-104		DTE61	67M-P1	
C54	82	500	65B21-820						
C55	68	500	65B21-680	1469-00007			5R5Q7		
C56	.1	200	64B9-7	P288-1	DF-104		PJ2P1	MS-47	
C57	.047	400	64B6-9	P488-047	DF-503		PTE4S47	47M-S47	
C58	.022	400	64B9-11	P488-022	DD-203		PTE4S22	47M-S22	
C59	.47	100	64B9-3	P288-47			PJ2P5	47M-P5	
C60	270	500	65B21-271	1465-0003			5R5T3	MS-33	
C61	.01	600	64B9-13	P688-01	D6-103		PTE6S1	GP3-333-103	
C62	820	500							
C63	680	500	65B21-681	1479-0007			2N577	MS-37	
C64	.047	400	64A2-14	P488-047	DF-503		PTE4S47		
C66	.1	200	64B9-7	P288-1	DF-104		PJ2P1	47M-S47	
C67	.047	400	64A2-14	P488-047	DF-503		PTE4S47	47M-P1	
C67	.074	400	64A2-14	P488-047	DF-503		PTE4S47	47M-S47	
C68	.1	400	64B9-7	P488-1	DF-104		PTE4P1	47M-S47	
C69	39	3000						47M-P1	
C70	.015	600		P688-015			PTE6S15	20GA-G39	Note 4
C71	.01	400	64B9-13	P488-01	D6-103		PTE4S1	GP3-333-103	TP411 67M-S15 Note 5
									PT411 47M-S1 Note 5

Note 1. Some Models use 1000MMF in this application (Part #65C6-41)
Note 2. Some Models use .01MFD in this application (Part #64B8-13)
Note 3. Used in Ch. 19C1, and 19H1 only
Note 4. Some Models use 47MMF in this application (Part #65B1-64)
Note 5. Not used in all Models.
♦ Items C45, R52A, R52B are combined in one unit.
† Items C41, R38A, R39B are combined in one unit.
‡ Items C50A, C50B, C50C, R58A, R63B, R6C are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	75B11-21	QJ-397**	RTV-395	SBB-733-S	UF15L }	Contrast-Panel-Note 1
B	1 Meg	½					UR16A } ††	Volume-Rear-Note 2
C	Switch						UR-26 }	Attach to R1B
R1AA	1000Ω	½	75B13-21	QJ7-108	AG-8-S	AB-5	U-4	Contrast
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1AA
R1BA	1 Meg	½	75C2-16	Q19-137X	AT-112	BT-74-S	UT-443	Volume Tap@ 500KΩ
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1BA
C	Switch		Not Req.	Not Req.	SW-A	Not Req.	US-26	Attach to R1BA
R2A	1.5Meg	½	75B13-26	QJ1-138	AG-83-S	AB-75	U-155	Vert. Hold-Note 3
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R2A	500KΩ	½	75B13-23	QJ1-123	AG-44-S	AB-31	U-35	Horiz. Hold-Note 3
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R2AA	1.5Meg	½	75B17-3	QJ-400*	RTV-394		UF25L	Vert. Hold-Panel
R2AB	500Ω	½					UR54L	Horiz. Hold-Rear
R4A	100KΩ	½	75B13-25	QJ1-128	AG-49-S	AB-40	U-41	Attach to R4A
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R4A
R5A	2 Meg	½	75B13-53	QJ1-139	AG-83-S	B-75	U-56	DX Range Finder
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R5A
R6A	2.5Meg	½	75B18-3	QJ1-239	AG-84-S	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	3000Ω	½	75B13-7	QJ1-11 2	AG-15-S	AB-8	U-8	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	3 Meg	½	75B13-22	QJ1-130	AG-83-S	AB-75	U-56	Tone-Note 4
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R8A

Note 1. Some models may use a single control (See R1AA).
Note 2. Some models may use a single control (See R1BA).
Note 3. Some models may use a dual concentric control (See R2AA, R3AA).
Note 4. Used only in chassis No. 19C1 & 19H1.
* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-136 & P1-121 (Panel)
B11-123 & R12-129 (Rear).
** CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B17-108 & P1-126 (Panel)
B13-137 & R3- 213 (Rear) & SWITCH 76-1.
† UNIVERSAL REPLACEMENT-(MALLORY EXACT DUPLICATE PART NO. UE57H).

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	NOTES
R9	15KΩ	½	98A45-67		
R10	47KΩ	½	98A45-17		
R11	3300Ω	½	98A45-19	BTS-3200	
R12	1000Ω	½	94C37-86	BTS-1000	
R13	4700Ω	½	98A45-20	BTS-4700	
R14	2200Ω	½	98A45-21	BTS-2200	
R15	68000-5%	½	60B8-682	BTS-6800-5%	
R16	10KΩ	½	98A45-18	BTS-10K	
R17	47KΩ	½	98A45-17		
R18	1000Ω	½	60B8-102	BTS-1000	
R19	330Ω	½	60B8-331	BTS-330	
R20	8200Ω-5%	½	60B7-822		
R21	47Ω	½	60B28-45	BTS-47	
R22	1000Ω	½	60B8-102	BTS-1000	
R23	22KΩ	½	60B8-223		
R24	330Ω	½	60B8-331	BTS-330	
R25	1 Meg	½	60B8-105		
R26	1 Meg	½	60B8-105		
R27	68Ω	½	60B28-44	BTS-68	
R28	330Ω	½	60B8-331	BTS-330	
R29	10KΩ-5%	½	60B7-103		
R30	150Ω	½	60B8-151	BTS-150	
R31	8200Ω	2	60B20-822		
R32	33KΩ	½	60B8-333	BTS-33K	
R33	820KΩ	½	60B8-824	BTS-820K	
R34	5600Ω	½	60B8-562	BTS-5600	
R35	1 Meg	½	60B8-105	BTS-1 Meg	
R36	33KΩ	½	60B8-333	BTS-33K	
R37	5600Ω	1		BTA-5600	Note 1
R38	22KΩ	½	60B8-223	BTS-22K	
R38A	15KΩ	½	‡63B6-4	BTS-15K	
B	270KΩ	½		BTS-270K	
R40	180KΩ	½	60B8-184	BTS-180K	Note 2
R41	56KΩ	½	60B8-563	BTS-56K	Note 3
R42	2700Ω	½	60B8-272	BTS-2700	Note 3
R43	470KΩ	½	60B8-474		
R44	68Ω	½	60B28-44	BTS-68	
R45	330Ω	½	60B8-331	BTS-330	
R46	390Ω	½	60B8-391	BTS-390	
R47	47KΩ	½	60B8-473	BTS-47K	
R48	10KΩ	½	60B8-103	BTS-10K	
R49	10KΩ	½	60B8-103	BTS-10K	
R50	470Ω	½	60B8-471	BTS-470	
R51	47KΩ	½	60B8-473	BTS-47K	
R52A	470KΩ	½	‡63B6-5	BTS-470K	
B	1 Meg	½		BTS-1 Meg	
R53	910Ω-5%	½		BTS-910-5%	Note 4
R54	15000-5%	½		BTS-1500-5%	Note 5
R55	1200Ω	½	60B8-122	BTS-1200	
R56	2.7Meg	½	60B8-275	BTS-2.7Meg	
R57	47KΩ	½	60B8-473	BTS-47K	
R58	12KΩ	½	60B8-123	BTS-12K	
R59	2.7Meg	½	60B8-275	BTS-2.7Meg	
R60	18KΩ	1	60B14-183	BTA-18K	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	NOTES
R61	22K Ω	½	60B8-223	BTS-22K	
R62	820Ω	½	60B8-822	BTS-8200	Note 3
R63A	22KΩ	½		BTS-22K	
B	8200Ω	½	‡63B6-2	BTS-8200	
C	8200Ω	½		BTS-8200	
R64	1.2Meg	½	60B8-125	BTS-1.2Meg	
R65	1 Meg	½	60B8-105	BTS-1 Meg	
R66	10K Ω-5%	½	60B7-103	BTS-10K-5%	
R67	1 Meg	½	60B8-105	BTS-1 Meg	
R68	820Ω	½	60B8-821	BTS-820	
R69	560Ω	½	60B8-561	BTS-560	
R70	560Ω	½	60B8-561	BTS-560	
R71	1000Ω	½	60B8-102	BTS-1000	
R72	330KΩ	½	60B8-334	BTS-330K	
R73	820KΩ	½	60B8-824	BTS-820K	
R74	82KΩ-5%	½	60B7-823	BTS-82K-5%	
R75	330KΩ-5%	½	60B7-334	BTS-330K-5%	
R76	3900Ω	½	60B8-392	BTS-3900	
R77	150KΩ	½	60B8-154	BTS-150K	
R78	820Ω	½	60B8-822	BTS-8200	
R79	82KΩ	½	60B8-823	BTS-82K	
R80	150KΩ	½	60B8-154	BTS-150K	
R81	68KΩ	½	60B8-683	BTS-68K	
R82	22KΩ	½	60B8-223	BTS-22K	
R83	820KΩ	½	60B8-824	BTS-820K	
R84	1 Meg	½	60B8-105	BTS-1 Meg	
R85	68Ω	½	60B28-44		
R86	47Ω	1	60B14-470	BW-1-47	
R87	82Ω	½	60B28-31		
R88	8200Ω	2	60B20-822	BTB-8200	
R89	1200Ω	2	60B20-122	BTB-1200	
R90	1000Ω	2	60B20-102	BTB-1000	
R91	4.7Ω	½	60B28-11		
R92	680KΩ	½	60B8-684	BTS-680K	Note 6
R93	680KΩ	½	60B8-684	BTS-680K	Note 6

† Items R38A, R39B, C47 are combined in one unit.
♦ Items R52A, R52B, C45 are combined in one unit.
‡ Items R63A, R63B, R63C, C50A, C50B, C50C are combined in one unit.
Note 1. Some models may use a two 2700Ω resistor in series in this application.
Note 2. All 19 series chassis (run 1) use a 470KΩ resistor in this application.
Note 3. Not used in all models.
Note 4. Some models may use a 1100Ω resistor in this application.
Note 5. Some models may use a 4700Ω resistor in this application.
Note 6. Some models may use a single 270KΩ Watt) resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC	580VCT	5VAC	6.3VAC	80C35-1	P-8166	P-3077			
	② 1.56A	.200ADC	③ 3A	④ 9.1A						

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T2	190Ω	1060Ω	79A18-4	A-8125	A-3003	TSO-8	A-97X	30BT9 ⑤	Vert. Osc.Trans.
T3	654Ω tap	0Ω	79D41-1	A-8135					Horiz. Output Trans.
	② 46Ω								
	290Ω, 54Ω								
T4	1050Ω	7.5Ω	79D40-2	A-8123 ①	A-3037 ⑦	TSO-8	A-102X	222T1 ①	Vert. Output Trans.
T5A	34Ω		94C51-1	DY-11A ②		TY-7 ②	Y-19 ③		Horiz. Deflection Coils
B	44Ω								
T6	15Ω		94A-50-1			WC-12 ④	213R1		Vert. Deflection Coils
T7	390 tap		94A-49-1						Horiz. Linearity Coil
	⑥ 3.5Ω								Width Coil

① Drill one new mounting hole.
② Use original horiz. deflection coil network if necessary.
③ Use original deflection coil network
④ Connect to coded blue and red terminals.
⑤ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	2.8KΩ	3.6Ω	294Ω	.47Ω	79A8	A-3876 ①	A-3025 ①	RO-302 ①	S-1X ①	① Bend mounting tabs down, file out slots, mount on original mounting bracket.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA ADMIRAL PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1A	5"	PM	3.6Ω	78B19-1	5J4	5A07	① Used in Models 17DX10, 17DX11, 17DX12, 12DX10, 12DX11, 12DX12, & 12DX16. Used speaker field in leu of filter choke
B	5"	77Ω	3.6Ω	78B74-1 ①		5E77S	② Used in Model 222DX15, use filter choke
C	10"	PM	3.6Ω	78D47-2 ②	10J11	10A31	③ Used in Models 22DX15, 22DX16, 22DX17, 22DX26 & 22DX36. Use speaker field in lieu of filter choke
D	10"	77Ω	3.6Ω	78B75-1 ③		10E77S	

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE 10 CURRENT 1000 ~/~	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.180ADC	77Ω	1.12 Hy.	74B18-2	C-2327	C-2994		

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L2A	Ant. Coil	0Ω CT	0Ω	94D52-52				Channel 2, Note 1
B	Ant. Coil	0Ω CT	0Ω	94D52-53				Channel 3, Note 2
C	Ant. Coil	0Ω CT	0Ω	94D52-54				Channel 4, Note 3
D	Ant. Coil	0Ω CT	0Ω	94D52-55				Channel 5, Note 4
E	Ant. Coil	0Ω CT	0Ω	94D52-56				Channel 6, Note 5
F	Ant. Coil	0Ω CT	0Ω	94D52-57				Channel 7, Note 6
G	Ant. Coil	0Ω CT	0Ω	94D52-58				Channel 8, Note 7
H	Ant. Coil	0Ω CT	0Ω	94D52-59				Channel 9, Note 8
I	Ant. Coil	0Ω CT	0Ω	94D52-60				Channel 10, Note 9
J	Ant. Coil	0Ω CT	0Ω	94D52-61				Channel11, Note 10
K	Ant. Coil	0Ω CT	0Ω	94D52-62				Channel19, Note 11
L	Ant. Coil	0Ω CT	0Ω	94D52-63				Channel 13, Note 12
L4A	RF, Mixer Grid & Osc. Coil	0Ω		94D52-72				Channel 2, Note 13
B	RF, Mixer Grid & Osc. Coil	0Ω		94D52-73				Channel 3, Note 14
C	RF, Mixer Grid & Osc. Coil	0Ω		94D52-74				Channel 4, Note 15
D	RF, Mixer Grid & Osc. Coil	0Ω		94D52-75				Channel 5, Note 16
E	RF, Mixer Grid & Osc. Coil	0Ω		94D52-76				Channel 6, Note 17
F	RF, Mixer Grid & Osc. Coil	0Ω		94D52-77				Channel 7, Note 18
G	RF, Mixer Grid & Osc. Coil	0Ω		94D52-78				Channel 8, Note 19
H	RF, Mixer Grid & Osc. Coil	0Ω		94D52-79				Channel 9, Note 20
I	RF, Mixer Grid & Osc. Coil	0Ω		94D52-80				Channel 10, Note 21
J	RF, Mixer Grid & Osc. Coil	0Ω		94D52-81				Channel 11, Note 22
K	RF, Mixer Grid & Osc. Coil	0Ω		94D52-82				Channel 12, Note 23
L	RF, Mixer Grid & Osc. Coil	0Ω		94D52-83				Channel 13, Note 24
L5	Fil. Choke	0Ω		98A45-14				
L6	RF Choke	0Ω		94D46-66				
L7	Ant. Video IF	.6Ω		94D46-85	17-1004	TV-103 *	6189 *	
L8	Fil. Choke	0Ω		73A2-5			6604	1.5 Microhenries
L9	27.25MC Trap	.1Ω		72C96-23	20-1006		6171A	Admiral part no. Includes C22 & C23 Note 25
L10	2nd. Video IF	.4Ω	.4Ω	72C96-21	17-1062			
L11	3rd. Video IF	.4Ω	.4Ω	72C96-22	17-1063			
L12	4th. Video IF	.4Ω	.4Ω	72B107-1				
L13	Series Peaking Coil	5.5Ω		73A5-15	19-3180 **		8180 **	190 Microhenries, wound on 4.7KΩ resistor
L14	Shunt Peaking Coil	18.5Ω		73A5-17	19-3860			860 Microhenries
L15	4.5MC Trap	16.5Ω	4.6Ω	72B99-5	20-1004 ■	TV-151	1470	
L16	Series Peaking Coil	7Ω		73A5-13	19-3300 †		4565 †	284 Microhenries, wound on 33KΩ resistor
L17	Shunt Peaking Coil	8Ω		73A5-9	19-1923 ▲		4648 ▲	370 Microhenries, wound on 10KΩ resistor
L18	Sound IF	5Ω		72B99-7	20-1005 ▬	TV-151	1479	
L19	Ratio Det.	3.6Ω	.2Ω CT	72B68-1	17-1033 †	TV-110 †	4468 †	Tertiary winding -.9Ω
L20	Horiz. Osc.	75Ω		69B110	20-1402	TV-162	6163	Tapped@ 52Ω, Horiz. waveform winding -45Ω

** Parallel with 4.7KΩ resistor
† Parallel with 33KΩ resistor
♦ Enlarge mounting hole.
■ Disconnect 47MMF capacitor in parallel.
†Disconnect C39 when used as a replacement.
▬ Disconnect 10MMF capacitor parallel.
▲ Parallel with 82KΩ resistor

Note 1. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-52 in this application.
Note 2. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-53 in this application.
Note 3. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-54 in this application.
Note 4. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-55 in this application.
Note 5. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-56 in this application.
Note 6. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-57 in this application.
Note 7. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-58 in this application.
Note 8. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-59 in this application.
Note 9. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-60 in this application.
Note 10. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-61 in this application.
Note 11. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-62 in this application.
Note 12. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc., uses part #94D 46-63 in this application.
Note 13. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-72 in this application.
Note 14. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-73 in this application.
Note 15. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-74 in this application.
Note 16. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-75 in this application.
Note 17. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-76 in this application.
Note 18. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-77 in this application.
Note 19. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part#94D 46-78 in this application
Note 20. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-79 in this application.
Note 21. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-80 in this application.
Note 22. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-81 in this application.
Note 23. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-82 in this application.
Note 24. Alternate tuner part No. 94D46-2 (Stamped 2Q, 3Q, etc.) uses part #94D 46-83 in this application.
Note 25. Alternate tuner part No. 94D46-2 uses part #73C 99-35 in this application.

ADMIRAL
CHASSIS 19B1, 19C1, 19F1, A, 19H1, 19K1

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ADMIRAL PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	8AG	1/4A @ 250V	84A4-2	84A5-1	362.250	387001	AGX 1/4	4520

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M2A	RF Tuner	94D52-1	For Models 17DX10, 17DX11, 17DX12
B	RF Tuner	94D46-2	For Models 121DX10, 121DX12, 121DX16, 221DX16, 221DX17, 221DX15, 221DX26, 221DX38, 121DX11, 222DX15
M3	Focus Magnet	94C53-1	Includes centering device
M4	Ion Trap	94A15-3	
B2, B6	Trimmer Capacitor	66A32-3	Dual 10-160MMF, Horiz. Locking Range, Horiz. Drive
	Cabinet	34E61-6	For Model 17DX10
	Cabinet	34E61-4	For Model 17DX11
	Cabinet	34E61-5	For Model 17DX12
	Cabinet	34E57-3	For Model 121DX10
	Cabinet	34E57-1	For Model 121DX11
	Cabinet	34E57-2	For Model 121DX12
	Cabinet	35E235-1	For Model 221DX38
	Cabinet	35E227-2	For Model 121DX16
	Cabinet	35E222-1	For Model 221DX15
	Cabinet	35E222-2	For Model 221DX16
	Cabinet	35E222-3	For Model 221DX17
	Cabinet	35E223-2	For Model 221DX26
	Cabinet	35E225-1	For Model 222DX15
	Cabinet Back	A3777	For Model 17DX10, 17DX11, 17DX12
	Cabinet Back	A3763	For Models 121DX10, 121DX11, 121DX12
	Cabinet Back	A3773	For Model 222DX15
	Control Panel Door	23B130	For Models 17DX10, 17DX11, 17DX12, 221DX38
	Control Panel Door	23D131-3	For Models 121DX10, 121DX11, 121DX12, 121DX16, 221DX15, 221DX16, 221DX17, 221DX26
	Control Panel Door	23D133-5	For Model 222DX15
	Safety Glass	21B65-1	For Models 17DX10, 17DX11, 17DX12
	Safety Glass	21B65-2	For Models 121DX10, 121DX11, 121DX12, 121DX16
	Safety Glass	21B62-7	For Models 221DX38, 221DX15, 221DX16, 221DX17, 221DX26
	Safety Glass	21B64-2	For Model 222DX15
	Mask (Metal)	23D128	For Models 221DX38, 212DX16, 221DX15, 221DX16, 221DX17 221DX26
	Mask (Plastic)	23E123	For Model 222DX15
	Door Escutcheon (less key)	37A86-1	Left Side (Facing Front) For Model 221DX38
	Door Escutcheon (less Key)	37A86-2	Right Side (Facing Front) For Model 221DX38
	Door Escutcheon (key)	37A86-3	For Model 221DX38
	Knob	33C52-23	TV Tuning, Maroon, "Channel" with gold inserts
	Knob	33C53-26	TV Tuning, Maroon, "Channel" less gold inserts
	Knob	33C53-5	TV Tuning, Maroon, "Channel" less inserts for 17DX12 only
	Knob	33D88-21	Tuning, Maroon, with gold ring
	Knob	33D88-23	Tuning, Maroon, less gold ring
	Knob	33C53-6	Tuning, Maroon, less gold ring for 17DX12 only
	Knob	33C53-24	Maroon Off/On Volume 2 1/4" dia. with gold inserts
	Knob	33C53-25	Maroon Off/On Volume 2 1/8" dia. with gold inserts
	Knob	33C53-27	Maroon Off/On Volume less inserts
	Knob	33C53-7	Maroon Off/On Volume less inserts for 17DX12 only
	Knob	33D88-20	Maroon, picture with gold ring
	Knob	33D88-22	Maroon, picture less gold ring
	Knob	33D53-8	Maroon, picture less gold ring for 17DX12 only
	Knob	33A92-3	Maroon, vertical
	Knob	33C53-29	Brown "Channel" with gold inserts
	Knob	33C53-18	Brown "Tuning"
	Knob	33C53-31	Brown "Off/On Volume" with gold inserts
	Knob	33C53-20	Brown "Picture "
	Knob	33C53-1	Ebony "Channel"
	Knob	33C53-2	Ebony "Tuning"
	Knob	33C53-3	Ebony "Off/On Volume"
	Knob	33C53-4	Ebony "Picture"
	Knob	33A23-4	Ebony "DX Rangefinder"

TROUBLE SHOOTING AIDS (CONT.)

AUDIO

WEAK OR NO SOUND

Substitute V8, V9, V10 and V11.
Check alignment of ratio detector and Sound IF stages. Check alignment of Video IF stages.

BUZZ

Adjust ratio detector secondary for minimum buzz. If still noticeable, substitute V9 and readjust.

DISTORTED

Check audio amplifier stages V10 and V11 using audio signal generator.

If Undistorted	If Distorted
Check adjustment of ratio detector and Sound IF stages. Check Video IF alignment.	Check components of amplifier stage where distortion occurs.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check fuse in horizontal sweep sweep circuit. Check by substitution V14, V15, V16 and V17.
Check waveform W13.

If Unsatisfactory	If Satisfactory
Check L20 and other components of V14, particularly C63.	Check T3, T6, T7 and associated components. Check C64.

INSUFFICIENT HIGH VOLTAGE

If substituting V15, V16 and V17 fails to correct this, follow procedure under "Loss of High Voltage".

BLOOMING

Check by substitution V15, V16, V17 and V18. Check components of T3.
Check R91 for increase in value.

POWER

SMALL RASTER, WEAK SOUND

Substitute V18. Check B plus circuit for shorts and replace any leaky capacitor.

DIM PICTURE

Check picture. Follow procedure outlined under "Small Raster, Weak Sound". Also, check Boost B+ circuit components.

GENERAL

NO PICTURE, NO SOUND, NO SNOW

Check by substitution V2, V3, V4 and V6. Check associated components.

WEAK PICTURE, WEAK SOUND

Substitute V5 and check components.

SOUND, BUT NO PICTURE

Substitute V7 and check associated components.

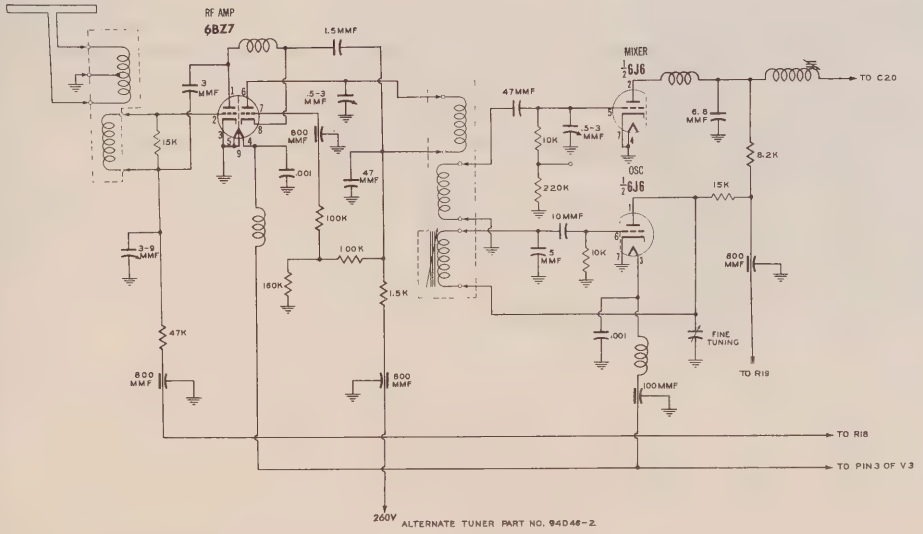
SNOWY PICTURE, NO SOUND

Substitute V1 and check tuner components.

INTERMITTENT STREAKS

Check high voltage circuit for corona discharge and arcing.

The Trouble - Shooting photographs shown above are made with permission of transmitting station WFBM-TV and in no way reflect the quality of the transmitted picture. Similarly, symptoms shown are assumed and are not indicative of the quality and workmanship of this receiving equipment.



A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

ALTERNATE TUNER SCHEMATIC

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

PICTURE TUBE SAFETY GLASS CLEANING

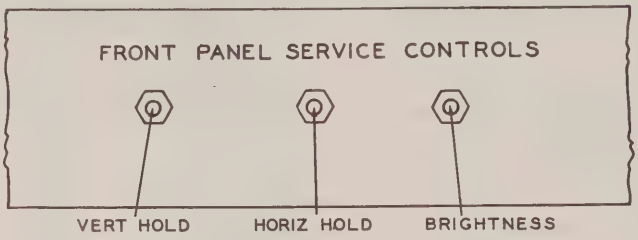
Remove 4 metal screws and 4 triangle plates located at each corner.

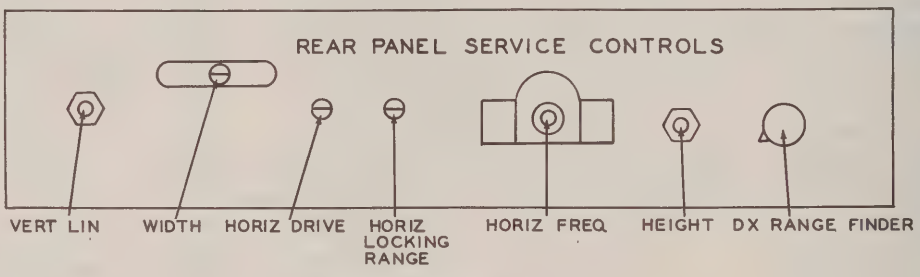
Remove safety glass. Hold safety glass in while removing. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION





SPECIAL ADJUSTMENTS- DX RANGE FINDER ADJUSTMENT

In normal signal strength areas the DX range finder control will usually be set at "0" position. In intermediate areas a setting from 10 to 150 may prove satisfactory and in fringe areas position 150 to 300 may give best results. In weak signal - high noise level areas adjust for minimum snow in the picture.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

Bottom slug accessible through hex hole in top slug. Use appropriate hex alignment tool and adjust L19 until Sound IF detector buzz disappears.

FUSES

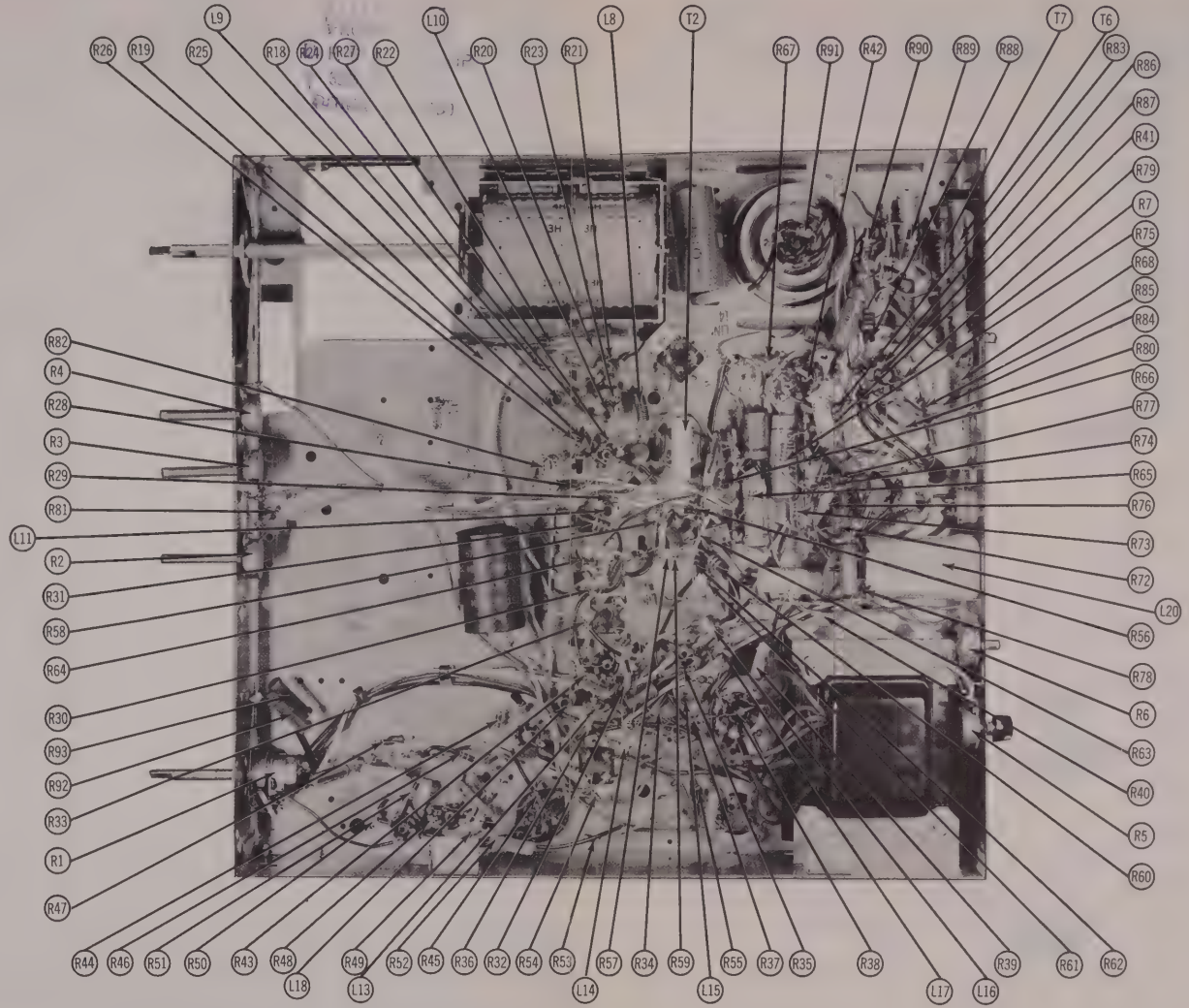
One fuse is used for horizontal sweep circuit protection. (For location, see tube placement chart).)

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Disconnect built-in antenna (This is fastened to inside to back cover.)
3. Remove 6 metal screws. Remove rear cover.
4. Disconnect speaker. Remove 2 screws. Speaker will slide out.
5. Remove 4 chassis bolts. Remove chassis.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

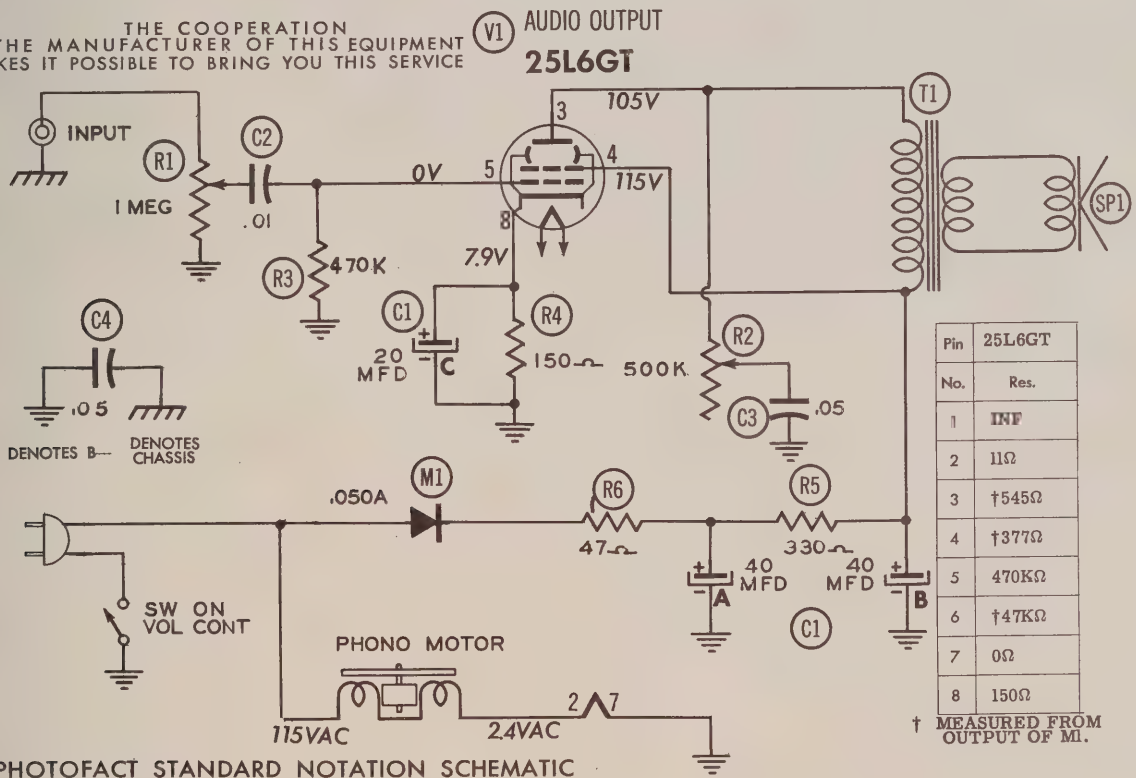
AIRCASTLE MODEL 652.327SA

PROPERTY OF
L. F. BL... SHIP

AIRCASTLE
MODEL 652.3275A

TRADE NAME	Aircastle Model 652.327SA
SUPPLIER	Spiegel, Inc., 1061 W. 35th.St., Chicago 9, Ill.
TYPE SET	AC Operated Audio Amplifier With 3 Speed Manual Record Player
TUBES (One)	Type 25L6GT Audio Output.
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING .36 Amp. @ 117 Volts AC

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE



Pin No.	25L6GT Res.
1	INF
2	11Ω
3	†545Ω
4	†377Ω
5	470KΩ
6	†47KΩ
7	0Ω
8	150Ω

† MEASURED FROM OUTPUT OF M1.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Audio Output	25L6GT	25L6GT	7S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	150	CE-1000	PRS150/50-30-20		EDL44215		3N532	TVA-3448	Red
B	40	150								Blue
C	20	150								Yellow
C2	.01	600	CP-103-6	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C3	.05	400	CP-503-4	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C4	.05	400	CP-503-4	P488-05		PTE4S5		PT415	4TM-S5	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg	½	VC-42	Q13-137	AG-63-Z	BKS-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	VC -44	Q11-133	AG-58-S	AB-59	U-50	Tone
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R3	470KΩ	½	RC-474-1	BTS-470K	
R4	150Ω	1	RC-151-4	BTA-150	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R5	330Ω	1	RC-331-4	BTA-330	
R6	47Ω	1	RC-470-4		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2.9KΩ	3.2Ω	168Ω	.42Ω	Part of Spkr.	A-3849 ①	A-2902 ①	RO-302②	S-4X ①	① Bend mounting tabs down, file out slots, mount on orig. mounting bracket.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: AIRCASTLE PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	4 x 6"	PM	3.2Ω	SP-46	46J6	46A07	

SELENIUM RECTIFIER

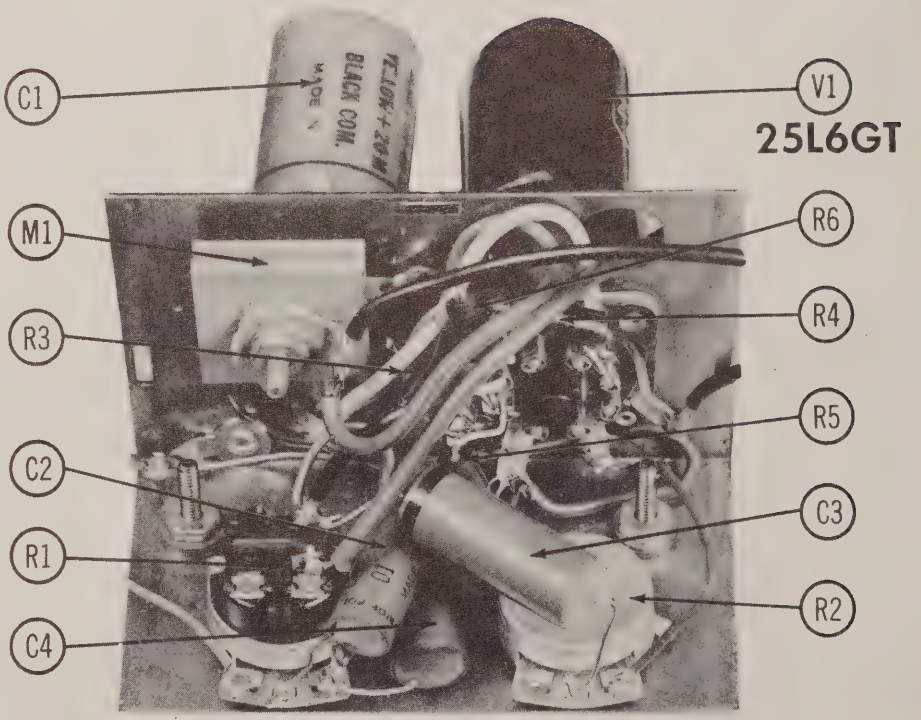
ITEM No.	RATING: CURRENT	REPLACEMENT DATA: AIRCASTLE PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.050A	SE-1000	NA5	8J1	1002A	6S65	65

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M2						*25H60		* Complete Arm. & Cart. Assembly.

ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

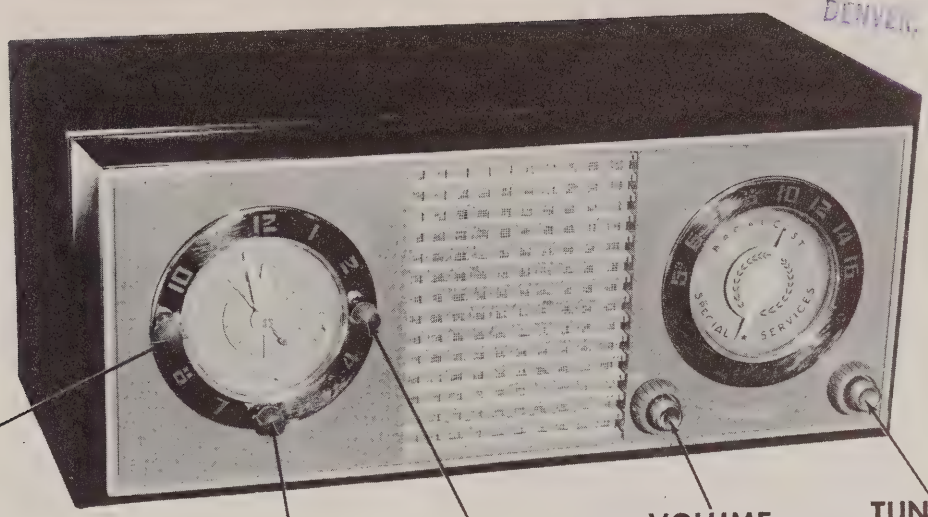
ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	WALCO PART No.	JENSEN PART No.	REMARKS
M3		W-14AGA	W-422	

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
	Case	CA-327SA	
	Knob	KN-105-V	Off/On Volume
	Knob	KN-10T	Tone

DENVER, COLORADO

PHILCO
MODELS 53-800, 53-804



PHILCO
MODELS 53-800, 53-804

PHILCO MODEL 53-804

TRADE NAME	Philco Models 53-800, 53-804
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC Operated AM-SW Superheterodyne Receiver with Electric Clock
TUBES (Six)	Types 6BJ6 RF Amp., 12BE6 Conv., 6BJ6 IF Amp., 6AQ6 Det.-AVC-AF Amp., 35C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC — SPECIAL SERVICES 1700-3400KC

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 12BE6 (V2). Low side to B-.	455KC (400% Mod.)	BC	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust in order given for maximum output.
2.		Loop	1620KC	"	1620KC	"	A5	Open tuning capacitor and place a .006 inch non-metallic shim between heel of rotor plates and the stator plates. Close capacitor to just touch shim and remove shim without disturbing setting. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1520KC	"	Tune to 1520KC signal	"	A6, A7	Adjust for maximum output.
4.		"	580KC	"	Tune to 580KC signal	"	A8	"
5.	Repeat steps 3 and 4 until no improvement is noted.							
6.		Loop	3200KC	Special Services	Tune to 3200KC signal	Across voice coil	A9, A10	Adjust for maximum output.
7.		"	1800KC	"	Tune to 1800KC signal	"	A11	"

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BJ6	6BJ6	7CM	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	6BJ6	6BJ6	7CM	
V4	Det-AVC-AF Amp.	6AQ6	6AQ6	7BT	
V5	Audio Output	35C5	35C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	30-2575-27	PRS150/40-40-40		EDL44215		3N536	TVA-3451	Orange
B	30	150								Red
C	30	150								Blue
C2	.05	200	30-4650-45	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	.05	200	30-4650-45	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C4	865	500	30-1220-68							
C5	47		60-00475420							
C6	7.5		30-1224-65							
C7	.05	200	30-4650-45	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C8	ż20		62-122001001	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C9	2000		30-1238-8	BPD-002	DD-202	TM5D2	801-002	DC-522	5HK-D2	
C10	5000		30-1238-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C11A	.005									
B	250		♦30-6001		♦PC-70		♦1406-01		♦104C4	
C										
C12	.022	600	30-4650-60	P688-022	DF-203	PTE6S22		PT6122	6TM-S22	
C13	.047	400	30-4650-45	489ZX-05		PJ4S47		PT4147	4TM-S47	
C14	.2	400	30-4644							

♦ Items C11A, C11B, C11C, R12A, R12B are combined in one unit.
When replacing items separately C11B and C11C should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	33-5565-51	Q13-133	AG-60-Z	B-60	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

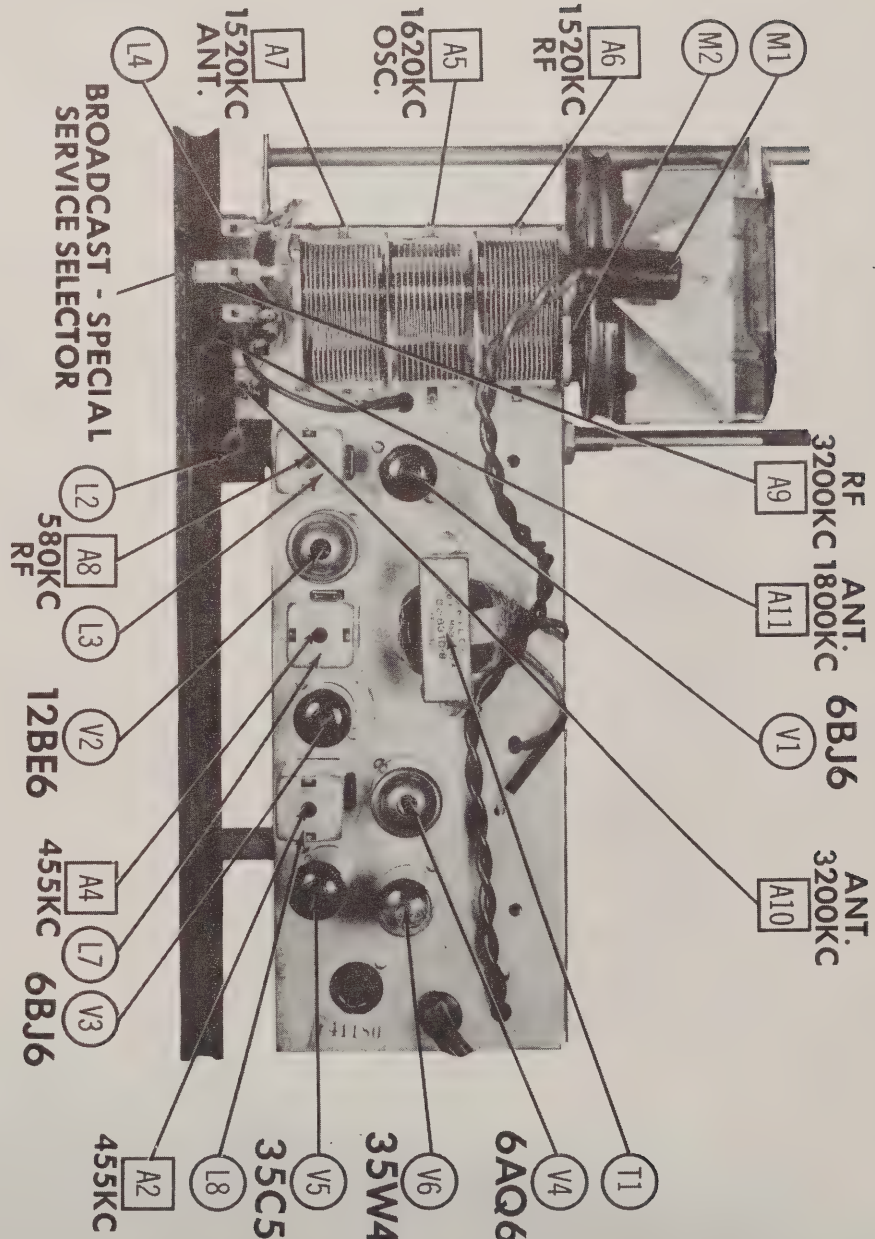
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R2	10KΩ	½	66-3108340	BTS-10K	
R3	4.7Meg	½	66-5478340	BTS-4.7Meg	
R4	2.2Meg	½	66-5228340	BTS-2.2Meg	
R5	22KΩ	½	66-3228340	BTS-22K	
R6	2.2Meg	½	66-5228340	BTS-2.2Meg	
R7	180Ω	½	66-1188340	BTS-180	
R8	2200Ω	½	66-2228340	BTS-2200	
R9	2.2Meg	½	66-5228340	BTS-2.2Meg	
R10	47KΩ	½	66-3478340	BTS-47K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R11	10Meg	½	66-6108340	BTS-10Meg	
R12A	500KΩ	½	♦ 30-6001	BTS-470K	
B	500KΩ	½		BTS-470K	
R13	150Ω	1	66-1154340	BTA-150	
R14	2200Ω	½	66-2228340	BTS-2200	Note
R15	1200Ω	½	66-2128340	BTS-1200	
R16	220Ω	1	66-1224340	BTA-220	
R17	*	*	33-1343-3		
R18	150KΩ	½	66-4158340	BTS-150K	

Note. Not used in all models.
* Special resistor-measures 800Ω-Cold, 100Ω-Hot.
♦ Items. R12A, R12B, C11A, C11B, C11C are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.1KΩ	3.2Ω	320Ω	.8Ω	32-8310-8 32-8310-3 ①	A-3876	A-2928	RO-2	S-2X	① Alternate Audio Output

SPEAKER

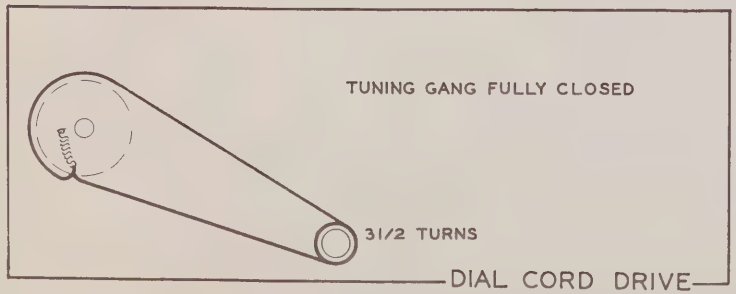
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	36-1627-21	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

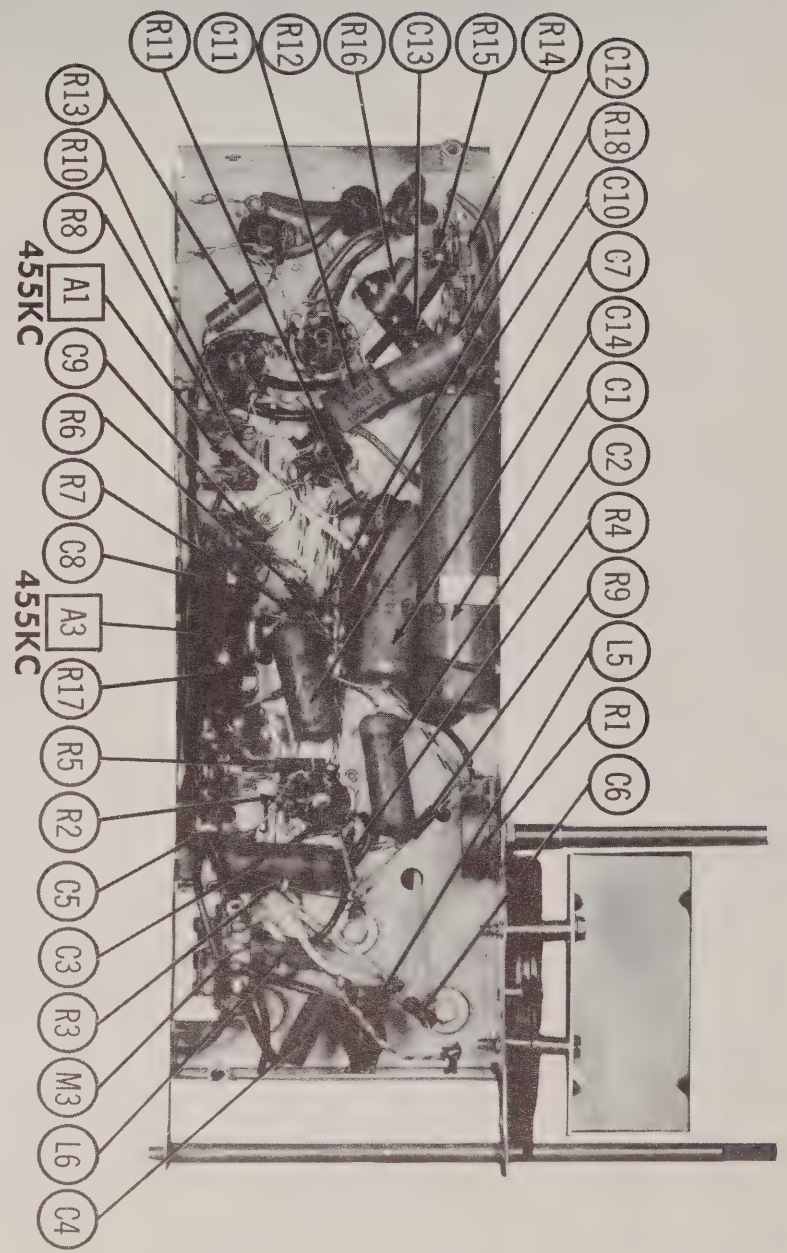
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3.5Ω		76-8098				Includes cabinet back
L2	SS Ant. Coil	2Ω		32-4561-4				
L3	BC RF Coil	95Ω	6.8Ω	32-4399-7A				
L4	SS RF Coil	2Ω		32-4561-4				
L5	BC Osc. Coil	1.6Ω	6.3Ω	32-4453-2			71-Osc.	
L6	SS Osc. Coil	3Ω		32-4562-1				
L7	Input IF	11.5Ω	12Ω	32-4160A	16-6758	BC-352	12-C1	
L8	Output IF	15Ω	15Ω	32-4240A	16-6770	BC-355	12-C6	

MISCELLANEOUS

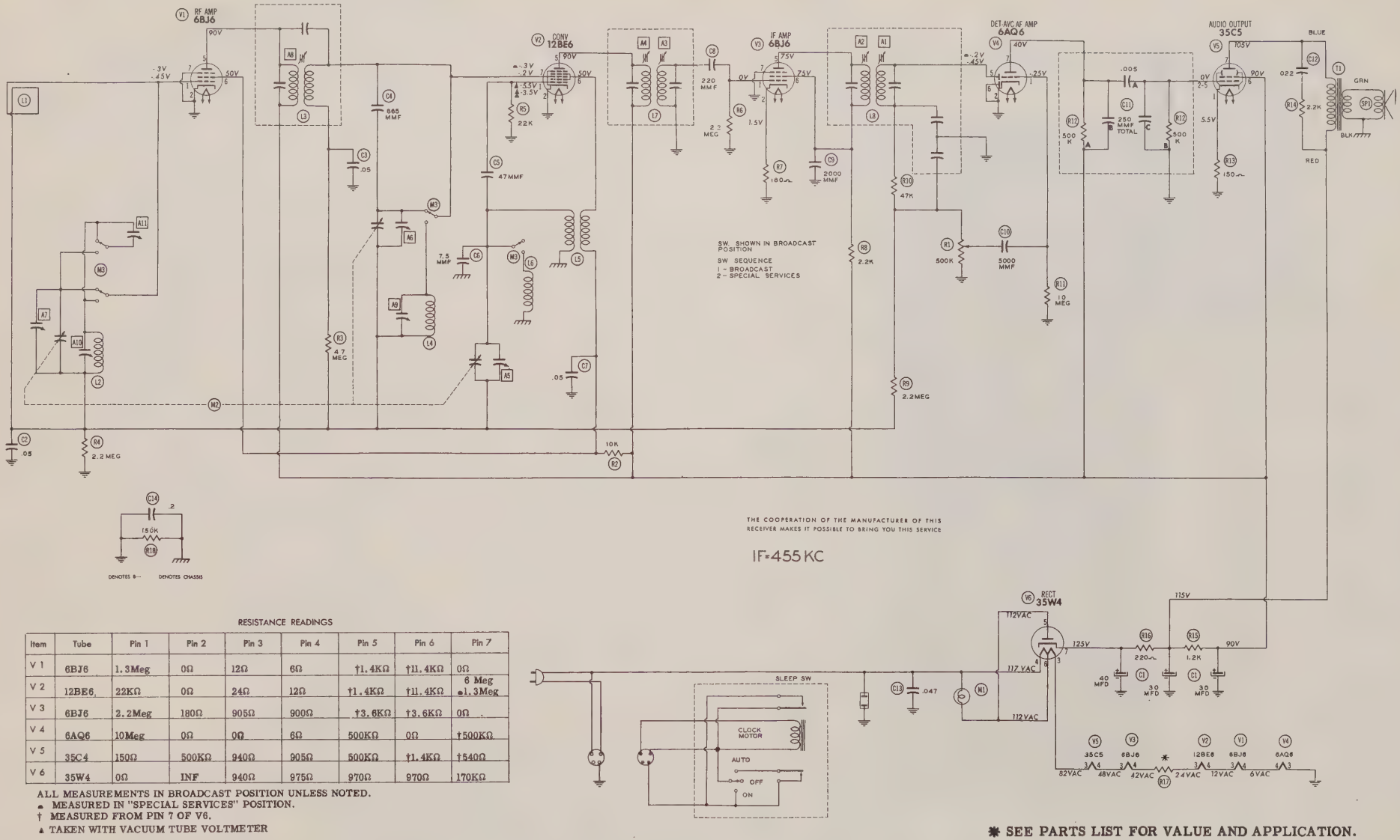
ITEM No.	PART NAME	PHILCO PART No.	NOTES
M1	Dial Light	34-2068	Type #47
M2	Tuning Capacitor	31-2771-2	30-486MMF, 30-486MMF, 17-162MMF
M3	Band Switch	42-1893-3	Special Services - Broadcast
	Trimmer Cap.	31-6477-17	Assembly Trimmer, includes special services RF Trimmer and Padder, Special services Mixer Grid Trimmer
	Cabinet	10970	Model 53-800
	Cabinet	10965	Model 53-804
	Knob	76-6373-2	Tuning & Volume (2 Used) Model 53-804
	Knob	54-6035	Tuning & Volume (2 Used) Model 53-800
	Knob	54-4998	Bandswitch
	Knob	54-4983-4	Clock (3 Used) Model 53-800
	Pointer	27-4891-2	Model 53-804
	Pointer	27-4891-3	Model 53-800
	Bezel	28-9039	Model 53-804
	Bezel	29-9128-1	Model 53-800
	Clock	41-2044-1	Model 53-804
	Clock	41-2044	Model 53-800
	Dial Scale & Backplate Assy.	76-8094	Model 53-804
	Dial Scale & Backplate Assy.	76-8205	Model 53-800



CHASSIS—BOTTOM VIEW



PHILCO MODEL 53-804



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BJ6	1.3Meg	0Ω	12Ω	6Ω	†1.4KΩ	†11.4KΩ	0Ω
V 2	12BE6,	22KΩ	0Ω	24Ω	12Ω	†1.4KΩ	†11.4KΩ	6 Meg ●1.3Meg
V 3	6BJ6	2.2Meg	180Ω	905Ω	900Ω	†3.6KΩ	†3.6KΩ	0Ω
V 4	6AQ6	10Meg	0Ω	0Ω	6Ω	500KΩ	0Ω	†500KΩ
V 5	35C4	150Ω	500KΩ	940Ω	905Ω	500KΩ	†1.4KΩ	†540Ω
V 6	35W4	0Ω	INF	940Ω	975Ω	970Ω	970Ω	170KΩ

ALL MEASUREMENTS IN BROADCAST POSITION UNLESS NOTED.
● MEASURED IN "SPECIAL SERVICES" POSITION.
† MEASURED FROM PIN 7 OF V6.
▲ TAKEN WITH VACUUM TUBE VOLTMETER

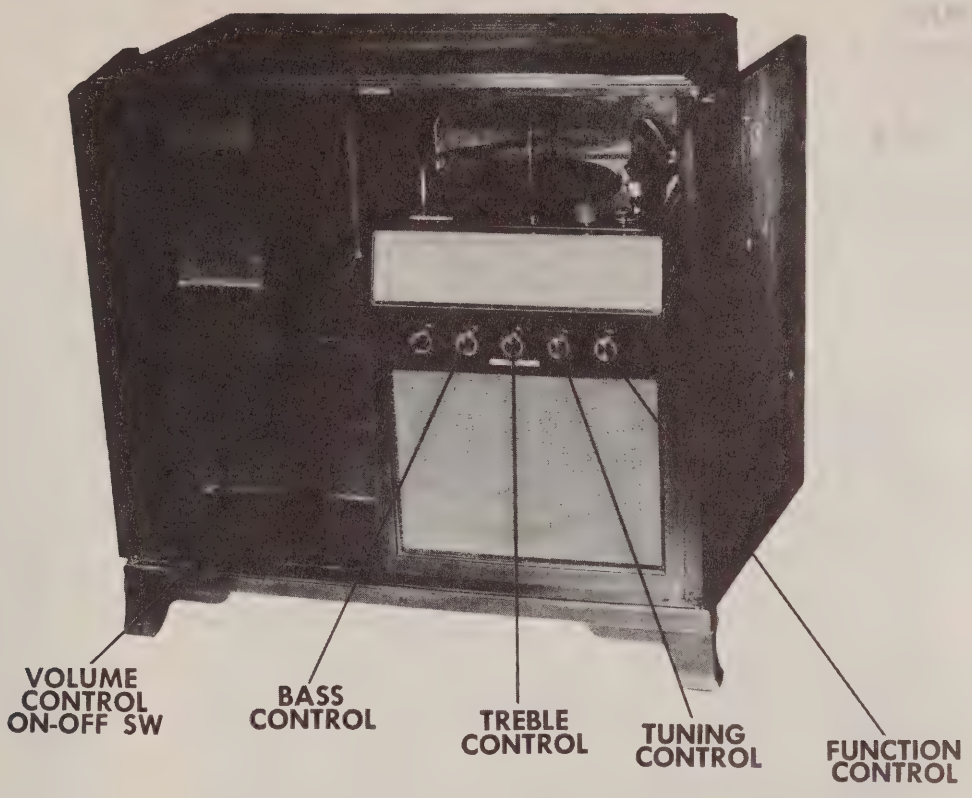
✱ SEE PARTS LIST FOR VALUE AND APPLICATION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard, W. Sams & Co., Inc. 1953

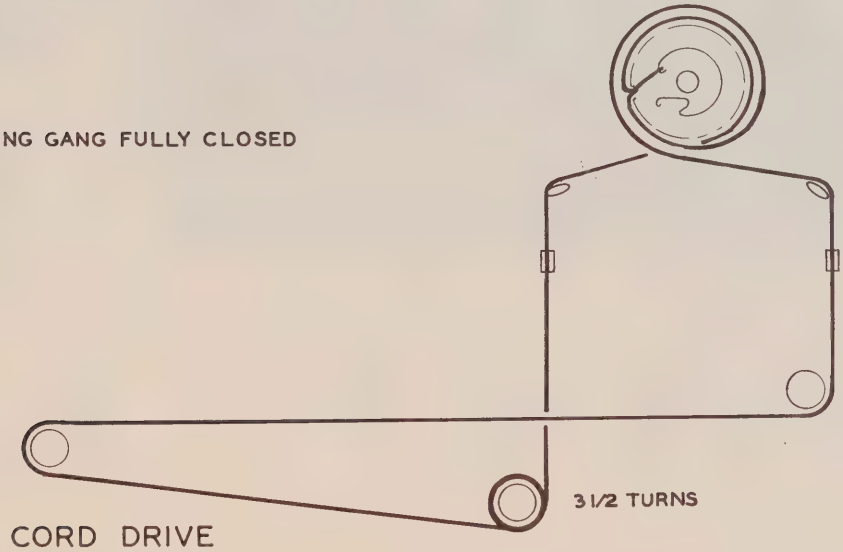
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RCA VICTOR MODEL 2-S-10
(Ch. RC1111 & Audio Ch. RS141)



RCA VICTOR MODEL 2-S-10
(Ch. RC1111 & Audio Ch. RS141)

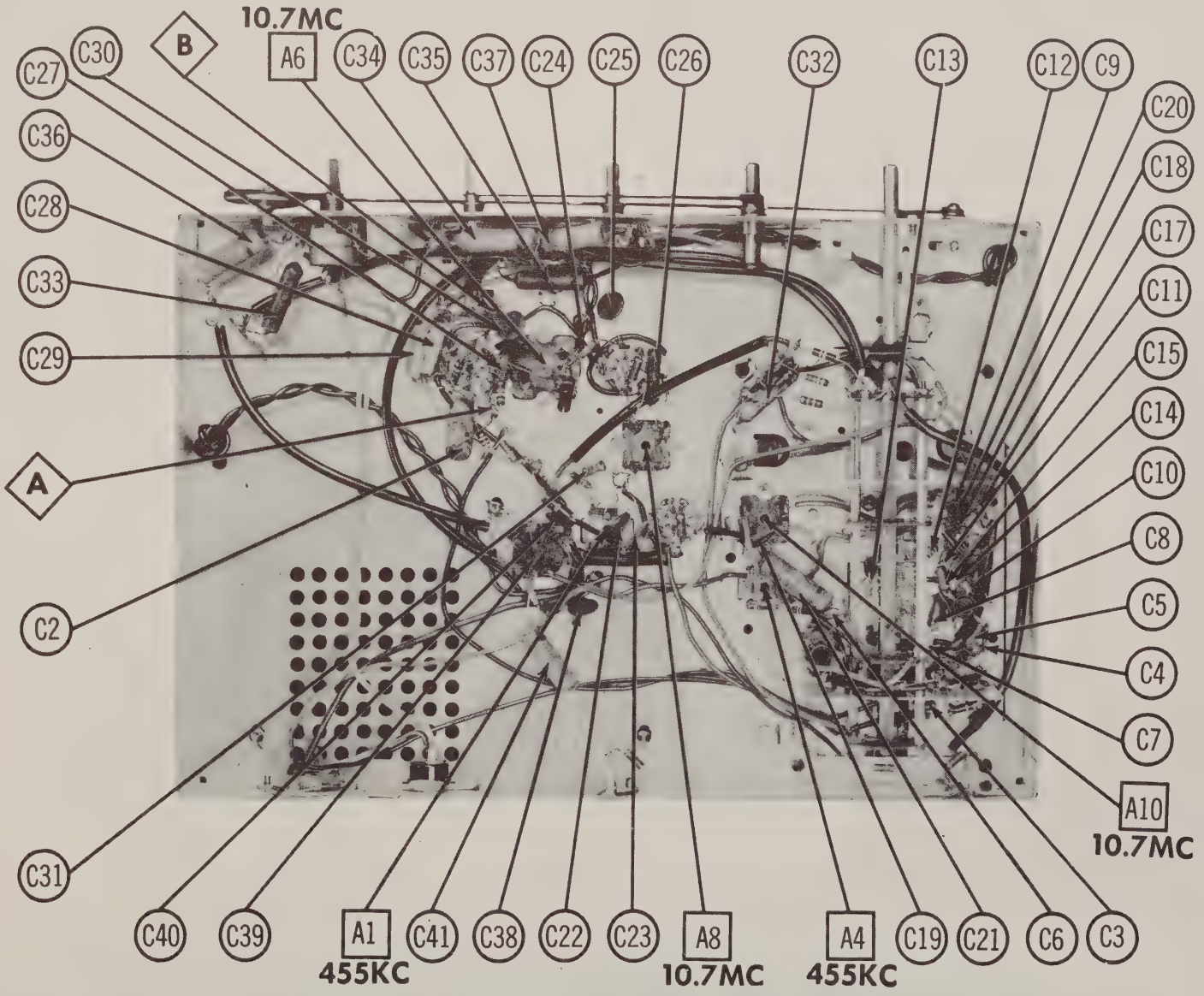
TRADE NAME	RCA Model 2-S-10 (Radio Ch. RC1111, Audio Ch. RS141)	
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N.J.	
TYPE SET	AC Operated Combination Radio-Phono, AM-FM Superheterodyne Receiver with 3 Speed Automatic Record Changer	
TUBES (Ten)	6CB6 RF Amp., 6J6 Conv., 6BA6 IF Amp., 6AU6 2nd. FM IF Amp., 6AL5 Ratio Det., 6AV6 AM Det.-AVC-AF Amp., 6C4 Phase Inv., (2) 6V6GT Audio Output, 5Y3GT Rectifier	
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING .725 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC	FREQ. MOD. 88-108MC



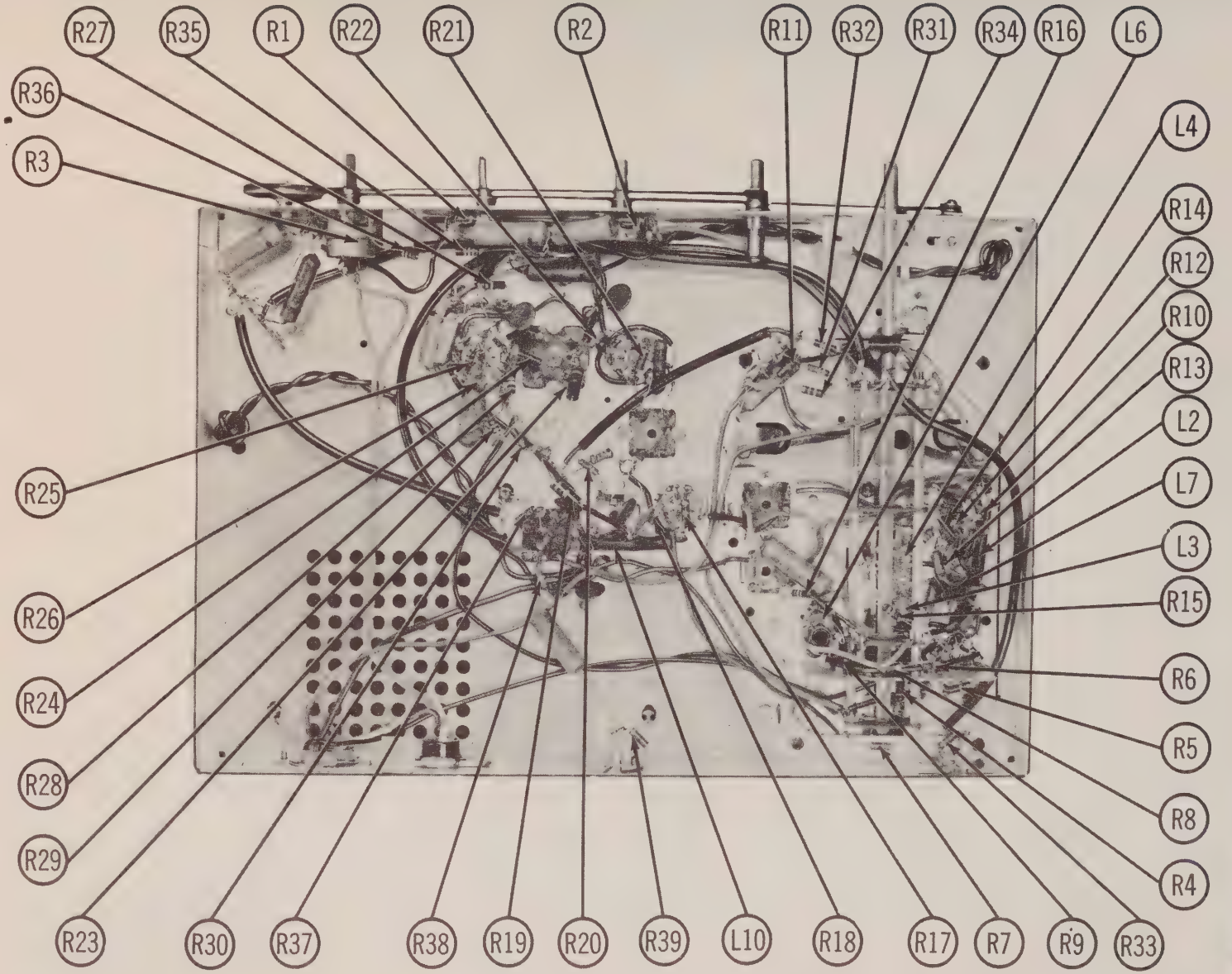
DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

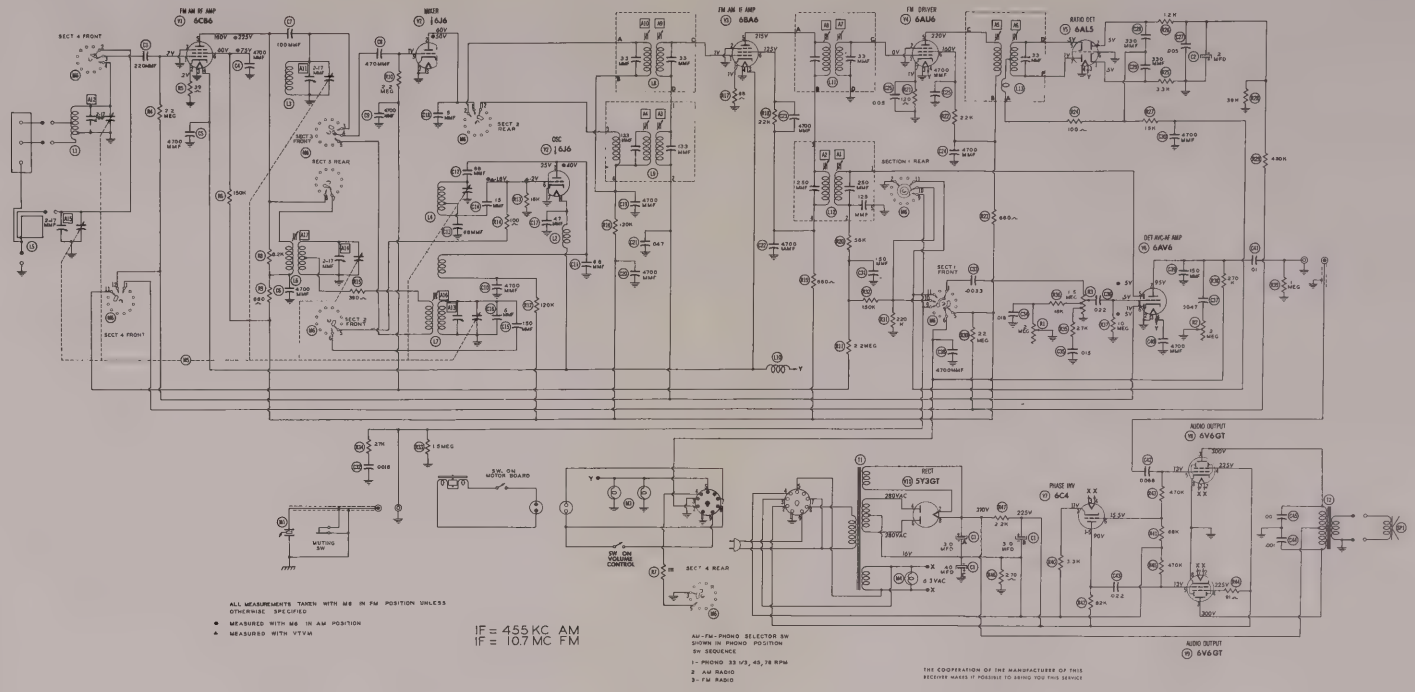


RADIO CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION



RADIO CHASSIS - BOTTOM VIEW - RESISTOR IDENTIFICATION

NAHIP
LIBRARY COLORADO
ST.


FM AM RF AMP V1 6CB6
MIXER V2 6J6
OSC V3 6J6
FM AM IF AMP V5 6BA6
FM DRIVER V6 6AU6
RATIO DET V7 6AL5
DET AVC-AF AMP V8 6AV6
AUDIO OUTPUT V9 6V6GT
RECT V10 5Y3GT
PHASE INV V7 6C4
AUDIO OUTPUT V9 6V6GT
SECT 4 FRONT
SECT 3 REAR
SECT 3 FRONT
SECT 2 REAR
SECT 2 FRONT
SECTION 1 REAR
SECT 1 FRONT
SECT 4 REAR
SW. ON MOTOR BOARD
MUTING SW
DP. ON VOLUME CONTROL
ALL MEASUREMENTS TAKEN WITH M8 IN FM POSITION UNLESS OTHERWISE SPECIFIED
● MEASURED WITH M8 IN AM POSITION
▲ MEASURED WITH VTVM
IF = 455 KC AM
IF = 10.7 MC FM
AU-FM-PHONO SELECTOR SW SHOWN IN PHONO POSITION
SW SEQUENCE
1- PHONO 33 1/3, 45, 78 RPM
2 AM RADIO
3- FM RADIO
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6CB6	■4.8Meg 2.7Meg	39Ω	0Ω	.1Ω	†12KΩ ■†2.8KΩ	‡155KΩ	0Ω	
V 2	6J6	†120KΩ	†120KΩ	0Ω	.1Ω	5 Meg	18KΩ	0Ω	
V 3	6BA6	■2.8Meg 450KΩ	0Ω	.1Ω	0Ω	†2.9KΩ	†25KΩ	68Ω	
V 4	6AU6	.4Ω	0Ω	0Ω	.1Ω	†2.9KΩ	†25KΩ	120Ω	
V 5	6AL5	3.3KΩ	40KΩ	.1Ω	0Ω	14KΩ	0Ω	14KΩ	
V 6	6AV6	10Meg	0Ω	0Ω	.1Ω	■440KΩ 210KΩ	■3 Meg 450KΩ	†270KΩ	
V 7	6C4	†84KΩ	INF	INF	INF	†84KΩ	68KΩ	3.6KΩ	
V 8	6V6GT	INF	INF	†255Ω	†2.2KΩ	510KΩ	270Ω	INF	0Ω
V 9	6V6GT	INF	INF	†255Ω	†2.3KΩ	470KΩ	270Ω	INF	0Ω
V 10	5Y3GT	INF	1 Meg	INF	240Ω	INF	256Ω	INF	1 Meg

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE STATED.
■ MEASURED IN AM POSITION.
† MEASURED FROM PIN 8 OF V10.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Set tone controls for maximum highs and lows. When measuring audio output, volume control should be at maximum.

AM IF ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	455KC (400∿Mod)	AM	Quiet point near low frequency end of dial.	Across voice coil	A1, A2	Adjust for maximum output.
2.	"	High side to stator, AM antenna section of tuning gang. Low side to chassis.	"	"	"	"	A3, A4	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	.01MFD	High side to pin 1 (grid) of 6AU6 (V4). Low side to chassis.	10.7MC (AM)	FM	Point on non-interference	DC probe to point (A). Common to chassis.	A5	Adjust for maximum deflection. Attenuate generator to maintain -4 volts at VTVM.
4.	"	"	"	"	"	Output meter across voice coil	A6	Adjust for MINIMUM audio output. If two or more points of decreasing audio are found the correct one will be the one giving greater and more sudden attenuation. Repeat steps 3 & 4.
5.	470Ω Carbon Resistor	High side to stator, FM antenna section of tuning gang. Low side to chassis near cathode ground of V2.	10.7MC	"	88MC	DC probe of VTVM to point (A). Common to chassis.	A7, A8 A9,A10	Adjust for maximum deflection. Shunt one winding of transformer with 180Ω resistor while adjusting other winding. Adjust generator output to maintain -4 volts at VTVM.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
3.	.01MFD	High side to pin 1 (grid) of 6AU6 (V4). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point (A). Low side to chassis.	A5	Disconnect stabilixer capacitor C2. Adjust for curve of maximum amplitude and symmetry as in Fig. 1.
4.	"	"	"	"	"	Vert. Amp. to point (B). Low side to chassis.	A6	Reconnect capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines as in Fig. 2.
5.	470Ω Carbon Resistor	High side to stator, FM antenna section of tuning gang. Low side to tuner chassis.	"	"	88MC	Vert. Amp. to point (A). Low side to chassis.	A7, A8, A9, A10	Disconnect capacitor C2. Adjust for curve of maximum amplitude and symmetry as in Fig. 1. Reconnect capacitor C2.

FM RF ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Two 120Ω Carbon Resistors	Across FM antenna terminals with 120Ω in each lead.	90MC	FM	90MC	DC probe to point (A). Common to chassis.	L4	Compress or expand L4 for maximum deflection.
7.	"	"	106MC	"	Tune to 106MC signal	"	A11 A12	Adjust for maximum deflection.
8.	"	"	90MC	"	Tune to 90MC signal	"	L1, L3	Compress or expand for maximum deflection.

Repeat steps 6, 7 and 8.

FIG. 1

AM RF ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
9.		Loop	1620KC (400∿Mod.)	AM	1620KC	Across Voice Coil	A13	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
10.		"	1400KC	"	1400KC	"	A14, A15	"
11.		"	600KC	"	600KC	"	A16, A17	Connect 10KΩ from RF stator to chassis. Adjust A16 for maximum output. Remove the 10KΩ. Adjust A17 for maximum output.

Repeat steps 10 and 11 until no improvement is noted.

Replace receiver in chassis, turn tuning gang fully closed and set pointer at extreme end of its low frequency travel.

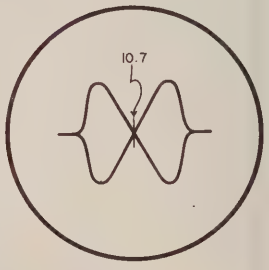
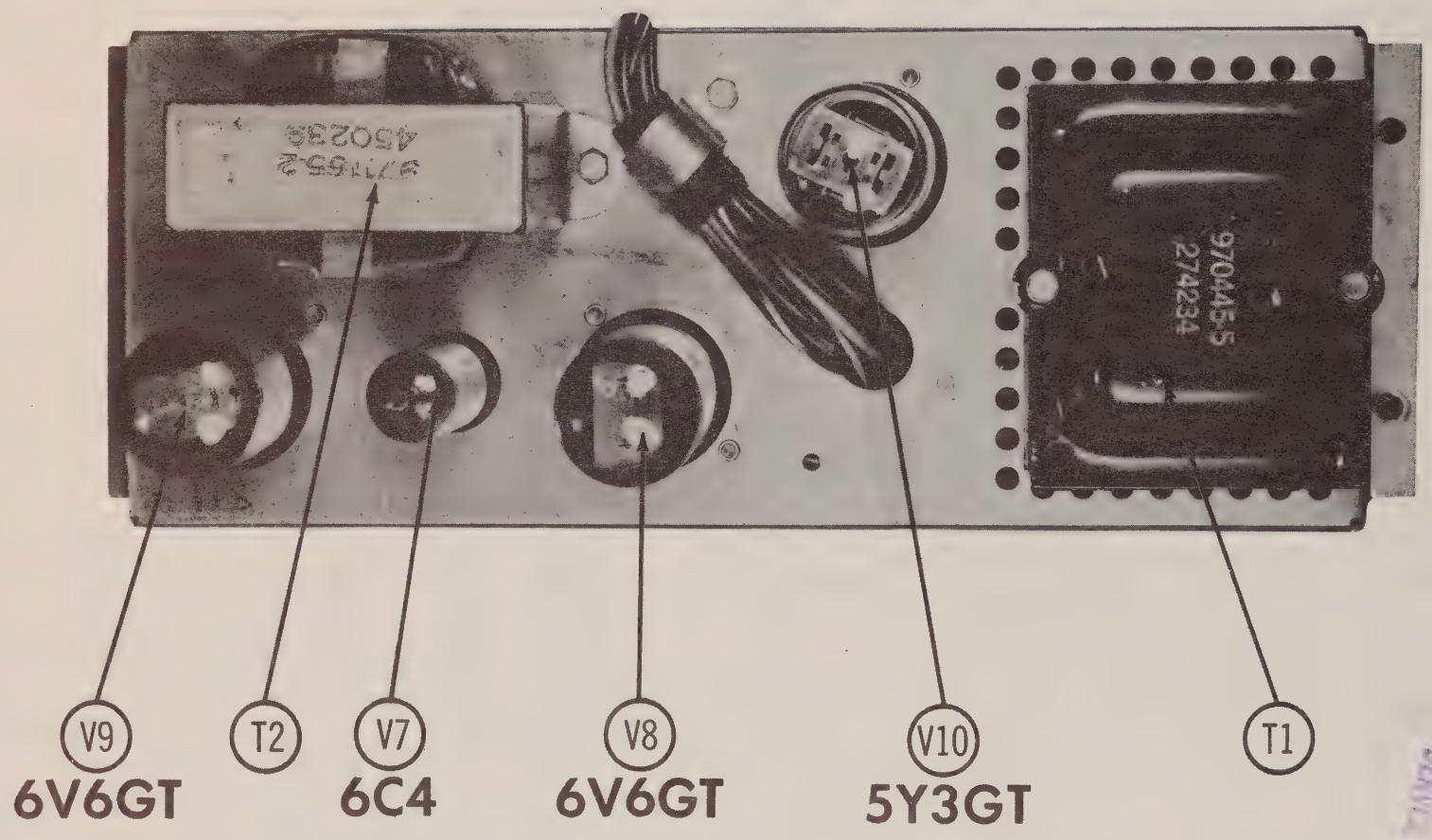


FIG. 2



POWER SUPPLY CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	6J6	6J6	7BF	
V3	1st. IF Amp	6BA6	6BA6	7BK	
V4	2nd. FM IF Amp.	6AU6	6AU6	7BK	
V5	Ratio Detector	6AL5	6AL5	6BT	
V6	AM Detector-AVC-AF Amplifier	6AV6	6AV6	7BT	
V7	Phase Inverter	6C4	6C4	6BG	
V8	Audio Output	6V6GT	6V6GT	7S	
V9	Audio Output	6V6GT	6V6GT	7S	
V10	Rectifier	5Y3GT	5Y3GT	5T	

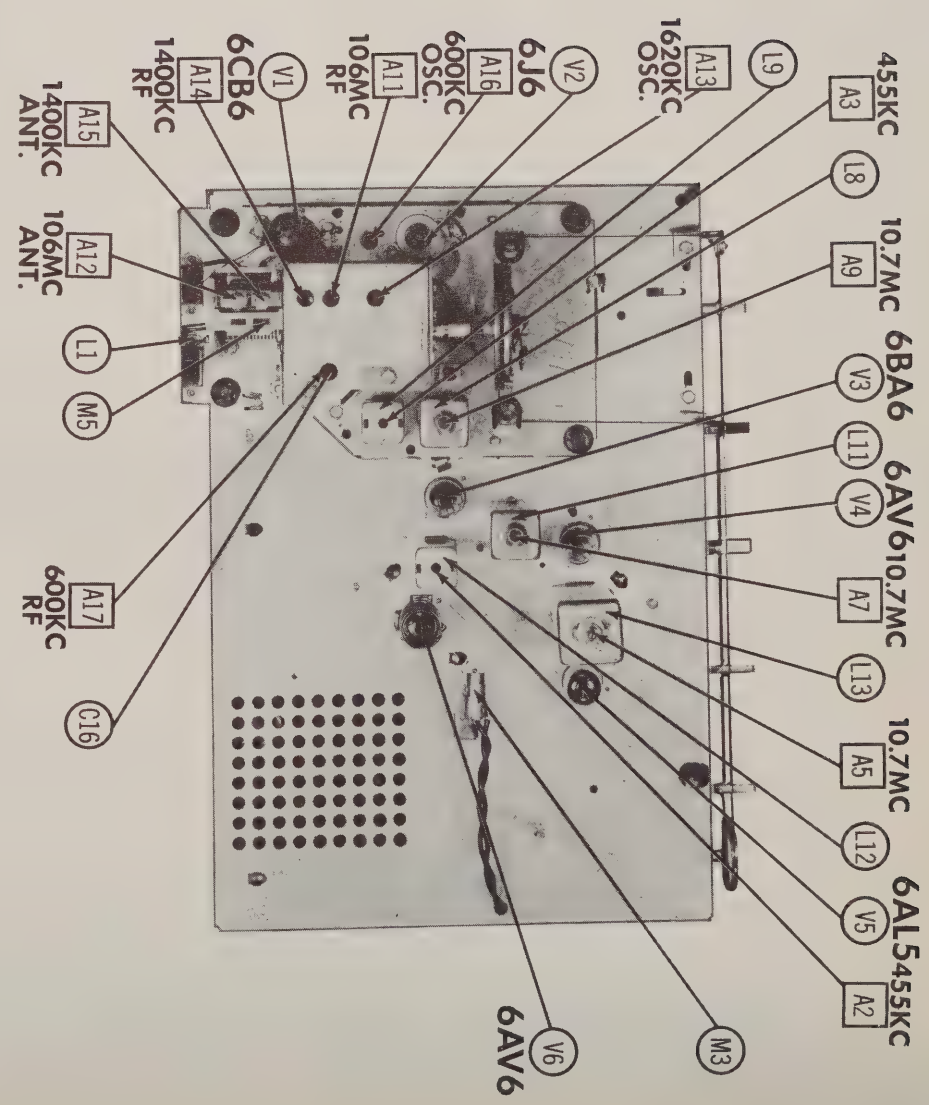
CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	30	450	77324	PRS450/30-		C103		3N539	TVA-2735	Red
B	30	350		30					TVA-1206	Green
C	40	25		PRS25/50						Blue
C2	2	50	73747	PRS150/4		BBR-2-50T		TC302	TVA-1301	
C3	220		75611	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C4	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C5	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C6	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C7	100		39396	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C8	470	500	39644	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1FM-35	
C9	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C10	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C11	6.8		77352							
C12	68		75612	SI68N750	TCN-68		N750L-680		5TCU-Q68	
C13	68		75612	SI68N750	TCN-68		N750L-680		5TCU-Q68	
C14	15		39044	SI15N750	TCN-15		N750K-150	NT-5415	5TCU-Q15	
C15	150		75614	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C16	5		75613	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C17	47		76348	SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C18	5		76513	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C19	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C20	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C21	.047	200	73558	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C22	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C23	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C24	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C25	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C26	.005	100	72490	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C27	.005	100	72490	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C28	330	500	39640	1469-00035						
C29	330	500	39640	1469-00035						
C30	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C31	150		75614	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C32	.0022	600		P688-0022	D6-222	PTE6D22	GP2-333-202	PT6222	6TM-D22	Note 1
C33	.0033	400	73795	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C34	.018	200	77469							
C35	.015	200	73797	P288-015		PTE6S15		TP400	6TM-S15	
C36	.022	400	73562	P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C37	.0047	400	73920	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C38	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C39	150		75614	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C40	4700		73473	BPD-0047	MD-502	TM5D5	811-005	DC-525	5HK-D47	
C41	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C42	.0068	400	73789	P688-0068	D6-682	PTE6D68	GP2-333-682	PT6268	6TM-D68	
C43	.022	400	73562	P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C44	.001	1000	75643	P1088-001		PTE16D1		PT1621	MB-D1	
C45	.001	1000	75643	P1088-001		PTE16D1		PT1621	MB-D1	

Note 1. Some Models use .0018MFD in this application (part #77468).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1	2 Meg	½	75561	Q17-139		B-77		Bass
R2A	2 Meg	½	75562	Q13-139	AG-66-Z	B-76	U-55	Treble
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3A	1.5Meg	½	75537	Q18-139XX	AT-95	SBT-222-S	UDT-291	Volume Tap ⓐ 200KΩ & 400KΩ
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R3A
C	Switch		Not Req.	76-1	SW-A	Not Req.	US-26	Attach to R3A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R4	2.2Meg	½	503522	BTS-2.2Meg	
R5	39Ω	½	503039	BTS-39	
R6	150KΩ	½	503415	BTS-150K	
R7	1000Ω	½	503110	BTS-1000	
R8	8200Ω	½	503282	BTS-8200	
R9	680Ω	1		BTA-680	
R10	2.2Meg	½	503522	BTS-2.2Meg	
R11	2.2Meg	½	503522	BTS-2.2Meg	
R12	120KΩ	½	503412	BTS-120K	
R13	18KΩ	½	503318	BTS-18K	
R14	100Ω	½	503110	BTS-100	
R15	390Ω	½	503139		
R16	120KΩ	½	503412	BTS-120K	
R17	68Ω	½	503068	BTS-68	
R18	22KΩ	½	503322	BTS-22K	
R19	680Ω	1		BTA-680	
R20	56KΩ	½	503356	BTS-56K	
R21	120Ω	½	503112	BTS-120	
R22	22KΩ	½	503322	BTS-22K	
R23	680Ω	1		BTA-680	
R24	100Ω	½	503110	BTS-100	
R25	3300Ω	½	502233	BTS-3300	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R26	1200Ω	½	502212	BTS-1200	
R27	15KΩ	½	503315	BTS-15K	
R28	39KΩ	½	503339	BTS-29K	
R29	430KΩ	½	503447		
R30	22Meg	½	503622	BTS-22Meg	
R31	220KΩ	½	503422	BTS-220K	
R32	150KΩ	½	503415	BTS-150K	
R33	1.5Meg	½	503515	BTS-1.5Meg	
R34	27KΩ	½	503327	BTS-27K	
R35	27KΩ	½	503327	BTS-27K	
R36	18KΩ	½	503318	BTS-18K	
R37	10Meg	½	503610	BTS-10Meg	
R38	270KΩ	½	503427	BTS-270K	
R39	1 Meg	½	503510	BTS-1 Meg	
R40	3300Ω	½	503233	BTS-3300	
R41	68KΩ	½	503368	BTS-68K	
R42	82KΩ	½	503382	BTS-82K	
R43	470KΩ	½	503447	BTS-470K	
R44	91Ω	½	503110		
R45	470KΩ	½	503447	BTS-470K	
R46	270Ω	2	522127		
R47	2200Ω	5	73637	1 3/4A-2250	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	RCA Victor PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC ⓐ .725A	640VCT .080ADC	5VAC ⓐ 2A	6.3VAC ⓐ 3.4A	75566	PM-8410 ①	P-2951	PH-90 ①	R-11B ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		RCA Victor PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	10KΩ CT	3.7Ω	510Ω CT	.6Ω	77323	A-3820 ①	A-2936 ①	RO-110 ①	S-15X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	VIKING PART No.	QUAM PART No.	
SP1	12"	PM	3.7Ω	76093	12J11	12A31	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	FM Ant. Coil	0Ω		77313				Tapped
L2	Fil. Choke	0Ω		71942			4602	1.07Microheneries
L3	FM RF Coil	0Ω		77314				
L4	FM Osc. Coil	0Ω		77315				Tapped
L5	AM Loop Ant.	.2Ω	1.4Ω	77332				
L6	AM RF Coil	65Ω	3.8Ω	77305				Includes core: Sec. Tap ⓐ ⓐ 2.6Ω
L7	AM Osc. Coil	1.2Ω	7.5Ω	75569				Includes core: Pick-up winding -2.2Ω
L8	1st. FM IF	.3Ω	.3Ω	75559	16-3471	FM-251	1451	
L9	1st. AM IF	10.5Ω	10.5Ω	75558				Tertiary winding=4.6Ω
L10	Fil. Choke	0Ω		71942				
L11	2nd. FM IF	1.2Ω	.4Ω	75560	16-3472	FM-251	1451	
L12	2nd. AM IF	7Ω	7Ω	76328	16-6770	BC-355	12-C6	
L13	Ratio Det.	1.2Ω	.2ΩCT	73743	17-3488	FM-252	1453	Tertiary winding = 2Ω

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	RCA Victor PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	75475	*9-D	Q or Q-33			96-0	0-1 or S-1 & 0-3 or S-3	* Complete arm & cart. assy.

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE REPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

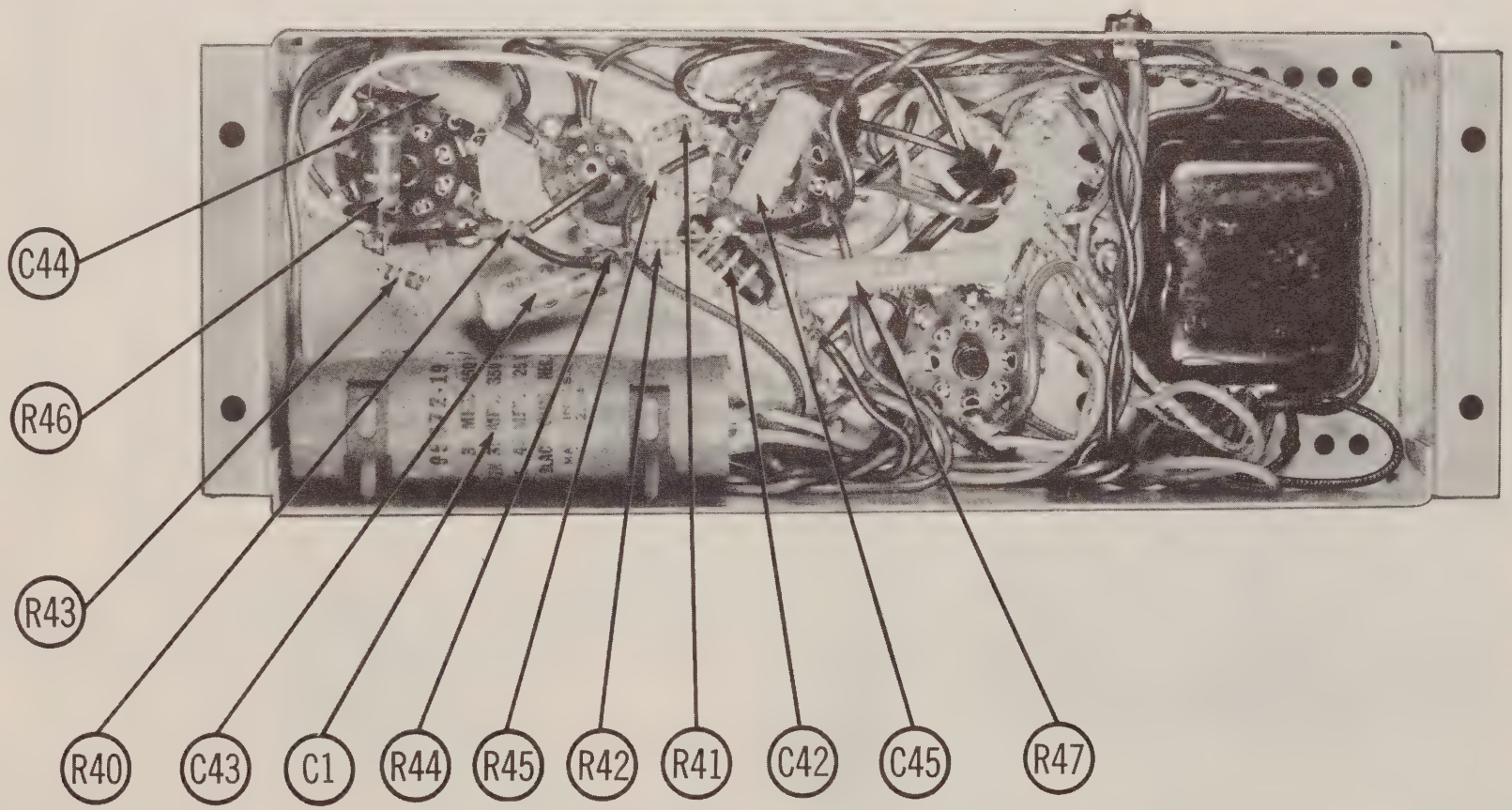
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	RCA Victor PART No.	WALCO PART No.	JENSEN PART No.	
M2	* 75496	W-44MGS or W-44MGA & W-44S or W-44A	M-74LP or M-75LP & M-74 or M-75	* 45-33 1/3 RPM needle
	♦75497			♦ 78RPM needle

MISCELLANEOUS

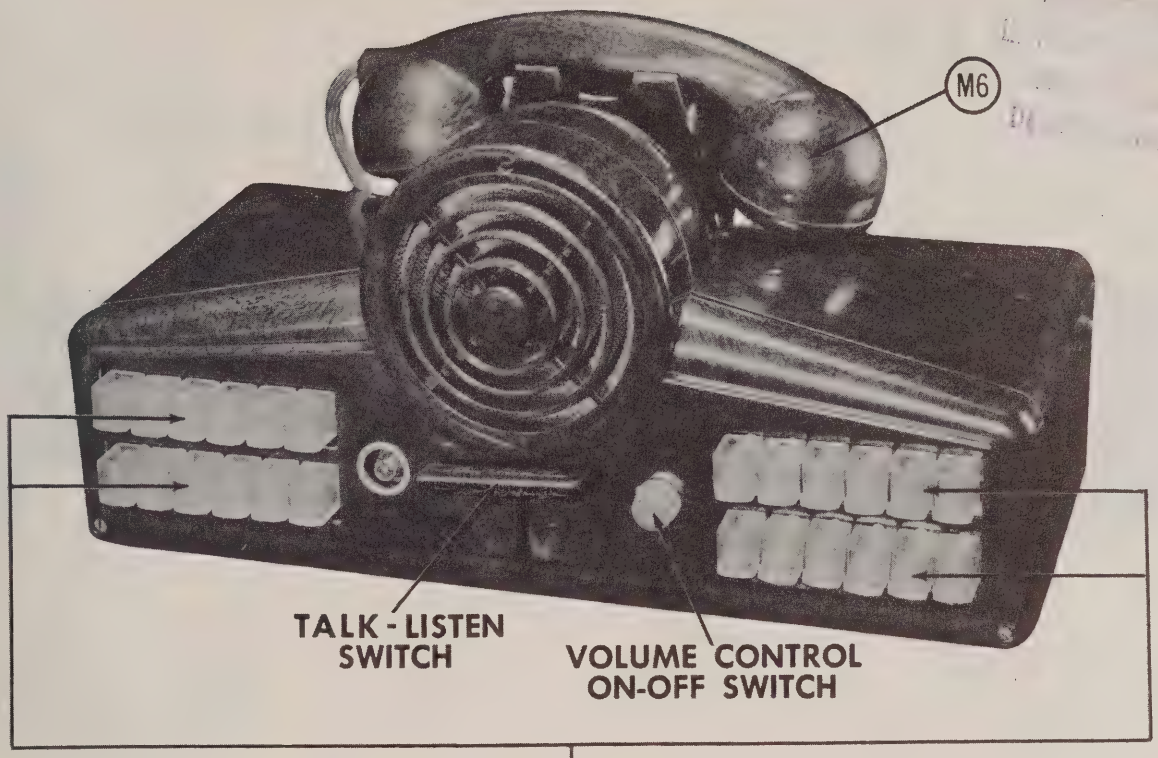
ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M3	Dial Light	11765	(2 Used) Radio Chassis
M4	Dial Light	11765	(1 Used) Amp. Chassis
M5	Tuning Capacitor	77308	26-502MMF, 23-285MMF, 18-180MMF
M6	Function Selector	77307	Phono-AM-FM
	Dial	77320	Polystyrene Scale on roll out mechanism Assy.
	Escutcheon	77321	Dial Scale-less dial on roll out mechanism assy.
	Pointer	77322	Station Selector on roll out mechanism assy.
	Back	77327	Light Brown on roll out mechanism assy (For blondes)
	Back	77326	Maroon on roll out mechanism assy (For mahogany & walnut)
	Back	77325	Cabinet
	Knob	77330	Function Selector (Maroon)
	Knob	77331	Function Selector (Tan)
	Knob	77328	Tuning Control, Tone Control, Volume Control, OFF/ON (Maroon)
	Knob	77329	Tuning Control, Tone Control, Volume Control, OFF/ON(Tan)
	Pull	77334	Cabinet Door Pull, Lower - 2 used
	Pull	77333	Cabinet Door Pull, Upper - 4 used



POWER SUPPLY CHASSIS-BOTTOM VIEW

RAULAND
MODELS 3406, H, 3412, H, 3424, H

RAULAND
MODELS 3406, H, 3412, H, 3424, H



RAULAND
MODELS 3406, H, 3412, H, 3424, H

TRADE NAME	Rauland Model 3406, 3406H, 3412, 3412H, 3424, 3424H
MANUFACTURER	Rauland Borg Corp., 3523 W. Addison, Chicago 18, Ill.
TYPE SET	AC Operated Inter-communication System Master Unit
TUBES (Four)	Types 6AU6 AF Amp., 6AT6 AF Amp., 6AQ5 Audio Output, 6X4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING .21 Amp. @ 117 Volts AC

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		RAULAND PART No.	STANDARD REPLACEMENT		
V1	AF Amplifier	6AU6	6AU6	7BK	
V2	AF Amplifier	6AT6	6AT6	7BT	
V3	Audio Output	6AQ5	6AQ5	7BZ	
V4	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	RAULAND PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▪25	350		AFH2-54					TVL-4612	
B	■20	300		PRS450/20					TVA-1610	
C	▲20	300								
C2A	■25	150		AFH2-13		BOI3		FP210	TVL-2425	
B	▲40	25								
C3	47	500		1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	
C4	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C5	.5	200		P288-5		PJ2P5		PT405	2TM-P5	
C6	500	500		1468-0005	D6-501	5W5T5	GP2K-501	MC245	1FM-35	
C7	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C8	220	500		1468-00025	D6-221	5W5T25	GP2K-221	MC240	1FM-325	
C9	150	500		1468-00015	D6-151	5W5T15	GP2K-151	MC236	1FM-315	

CONTROLS

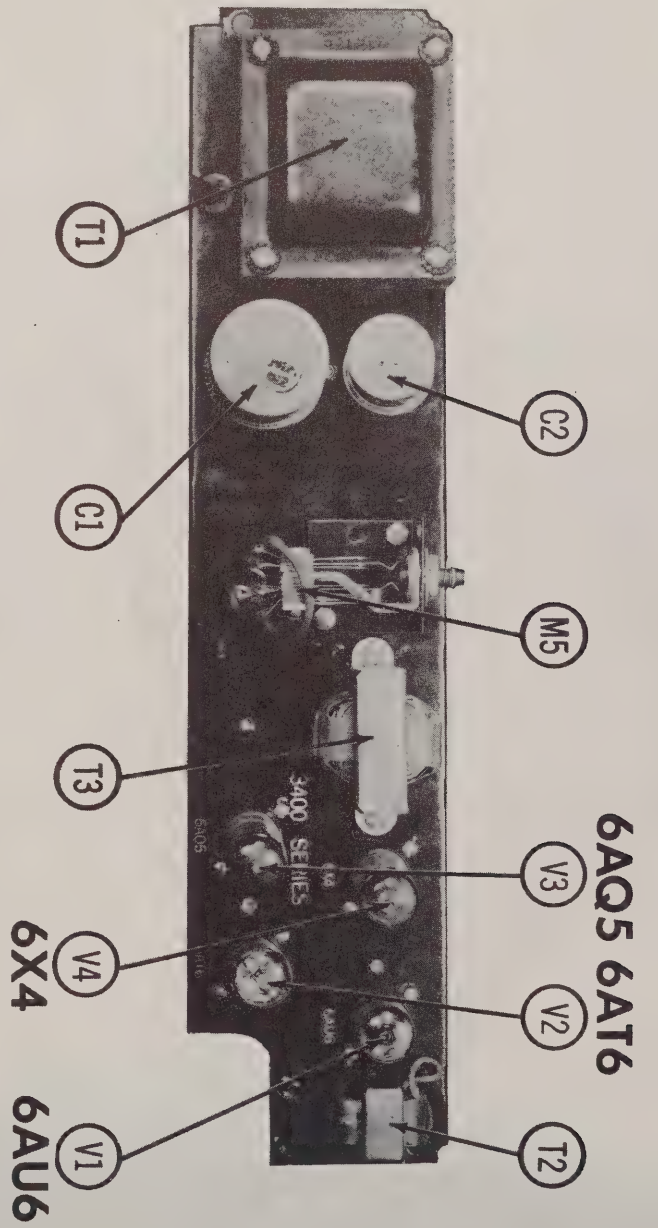
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RAULAND PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	200Ω	2	RPW-201B					Incoming Volume & Sw.
B	1Meg	½						
R2A	1Meg	½	RP-105W	Q13-137	AG-63-Z	AB-70	U-53	Outgoing Volume
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R2A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RAULAND PART No.	IRC PART No.	
R3	6800Ω	½		BTS-6800	
R4	1000Ω 5%	½		BTS-1000 5%	
R5	1000Ω 5%	½		BTS-1000 5%	
R6	10Ω	½		BTS-10	
R7	1000Ω 5%	½		BTS-1000 5%	
R8	1000Ω 5%	½		BTS-1000 5%	
R9	68Ω	½		BTS-68	
R10	3300Ω	½		BTS-3300	
R11	150KΩ	½		BTS-150K	
R12	330KΩ	½		BTS-330K	
R13	100KΩ	½		BTS-100K	
R14	270KΩ	½		BTS-270K	
R15	220KΩ	½		BTS-220K	
R16	2200Ω	½		BTS-2200	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RAULAND PART No.	IRC PART No.	
R17	470KΩ	½		BTS-470K	
R18	150KΩ	½		BTS-150K	
R19	68KΩ	½		BTS-68K	
R20	100KΩ	½		BTS-100K	
R21	470KΩ	½		BTS-470K	
R22	220Ω	1		BTA-220	
R23	1500Ω	½		BTS-1500	
R24	1500Ω	½		BTS-1500	
R25	33KΩ	½		BTS-33K	
R26	100KΩ	½		BTS-100K	
R27	100KΩ	½		BTS-100K	
R28	470Ω	2		BTB-470	
R29	470Ω	2		BTB-470	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	RAULAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .21A	455VCT .008ADC	6.3VCT @ 1.6A		LP-0202A	PM-8418	P-3047		R-6B

TRANSFORMER (AUDIO INPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		RAULAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2			6.2Ω CT	512Ω	LA-0043					
	Turns Ratio 1-17									

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		RAULAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T3	2.5KΩ	42Ω	232Ω	4Ω	LO-0121A					

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	RAULAND PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	42Ω	US-0059A	ST-739 Mod. P4-X	4A07Z45	

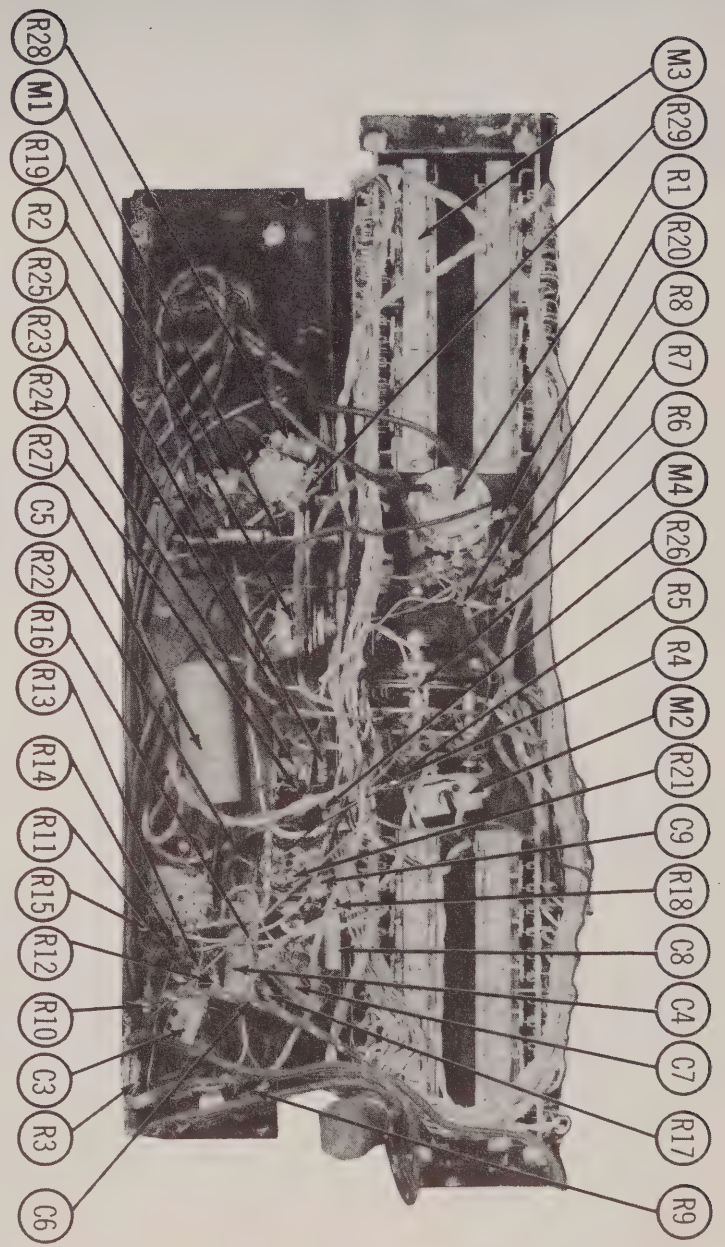
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RAULAND PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V			312001 (3AG 1A)	341001	AGC 1	HKP

MISCELLANEOUS

ITEM No.	PART NAME	RAULAND PART No.	NOTES
M2	Dial Light		Type NE51
M3A	Switch	X-0257-A	Station Selector 1-6
B	Switch	X-0257-A	Station Selector 7-12
C	Switch	X-0258-A	Station Selector 13-18
D	Switch	X-0258-A	Station Selector 19-24
M4	Switch	X-0255A	Function Selector Mute, listen, talk
M5	Switch	X-0256B	Handset Cradle
M6	Handset	VC-0662	

CHASSIS—BOTTOM VIEW



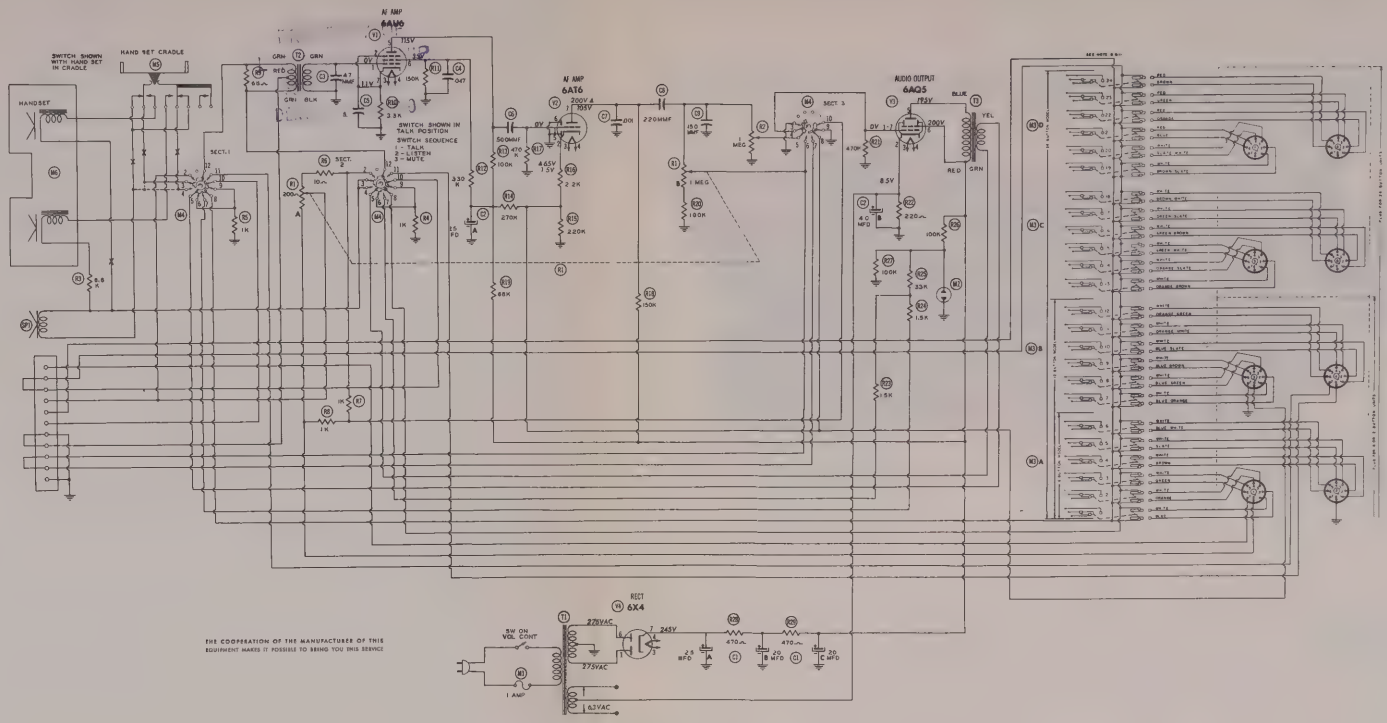
Handsets are supplied on "H" type models. The 3400 type master is designed so that its talk-listen switch shifts the selected remote circuit from input to output of its amplifier, the talk-listen bar must be operated when using the handset. Each Master unit is provided with a busy signal to indicate when a line is busy so that conversations unintentionally interrupted when a party calls a circuit on which someone is already talking.

OPERATION OF THE BUSY SIGNAL

The busy signal and pilot light is a neon lamp. When the master station depresses one of its selector buttons to make a call, the pair of wires corresponding to the desired station is connected across the busy signal input. If that station is busy, the neon lamp is extinguished, indicating that the circuit is in use.

USE OF SEMI-FIXED VOLUME CONTROL

The slotted shaft of the volume control, which adjusts the outgoing volume level, can be adjusted through a hole on the bottom of the cabinet. It is usually adjusted to the proper level by the person installing or servicing the equipment. As long as there is no change in the noise or position of the user, the Amplicall, or the background noise level, it is not necessary to change this adjustment. Rotating the control clockwise increases the volume, and counter clockwise rotation decreases the volume.



RESISTANCE READINGS

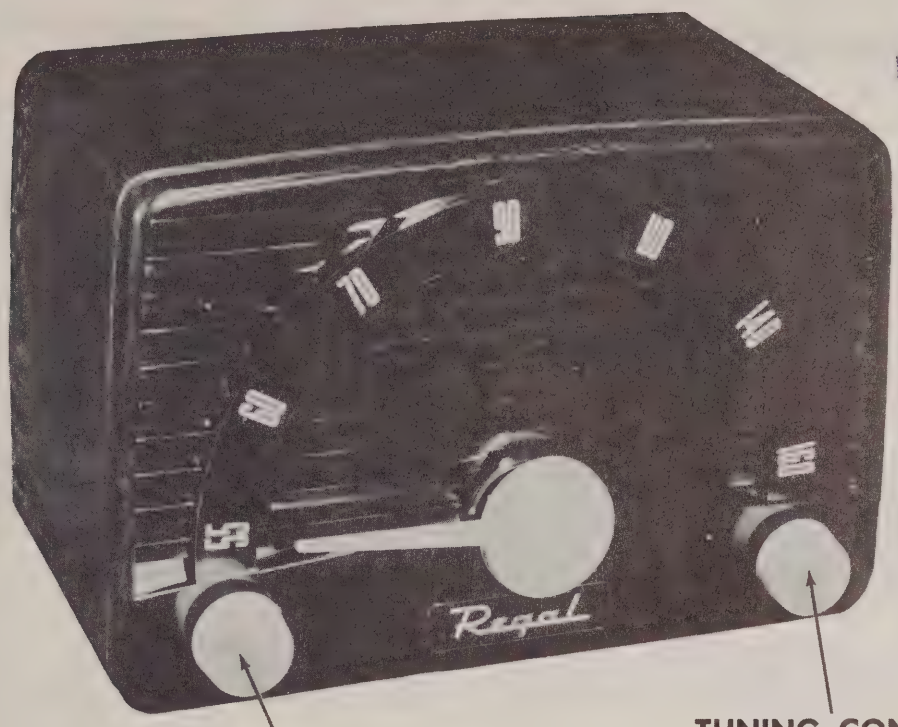
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6AU6	512Ω	3.3KΩ	220Ω	220Ω	†169KΩ	†400KΩ	3.3KΩ
V 2	6AT6	470KΩ	▲150KΩ 2.2KΩ	220Ω	220Ω	0Ω	0Ω	150KΩ
V 3	6AQ5	▲0Ω 20Ω	220Ω	220Ω	220Ω	†1.1KΩ	†940Ω	▲0Ω 20Ω
V 4	6X4	90Ω	3.5KΩ	220Ω	220Ω	0Ω	100Ω	100KΩ

ALL MEASUREMENTS IN "LISTEN" POSITION
▲ MEASURED IN "MUTE" POSITION
† MEASURED TO PIN 7 OF V4

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage measured at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

PROPERTY OF
L F [illegible] INC.
[illegible]
C. [illegible]



REGAL
MODEL 271

TRADE NAME	Regal Model 271
MANUFACTURER	Regal Electronics Corp., 605 W. 130th. St., New York, N.Y.
TYPE SET	AC/DC Operated Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 audio Output 35W4 Rectifier
POWER SUPPLY	110-120Volts AC/DC — RATING .24 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	456KC (400∿Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650KC	"	"	A5	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. If range of A5 is insufficient adjust trimmer at opposite end of stator plates.
3.		Loop	1500KC	Tune to 1500KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

Replace receiver in cabinet, turn tuning gang fully closed and set pointer parallel to base of cabinet at low frequency end of dial.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		REGAL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp	12AV6	12AV6	7BT	Some models use a 12AT6 in this application
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	REGAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	60-101	PRS150/50-50		EZ5515		2N521	TVA-2453	Red
B	50	150								Green
C2	.01	400	50-102	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	Note 1
C3	.05	200	50-104	P288-05	MD-502	PJ2S5		PT415	2TM-S5	
C4	100		55-102	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C5	.02	400	50-113	P488-02	DD-203	PTE4S2		PT412	4TM-S2	Note 1
C6A	220									
B	.002									
C	250		♦50-142		♦PC-150		♦1408-01		♦103C4	
D										
E	.005									
C7	.01	400	50-102	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C8	.05	200	50-104	P288-05	MD-502	PJ2S5		PT415	2TM-S5	Note 1
C9	.05	400	50-146	489ZX-05		PJ4S5		PT415	4TM-S5	
C10	.2	400	50-120	484-2		PTE4P22		PT4025	4TM-P22	

Note 1. Not used in all Models.
♦ Items C6A, C6B, C6C, C6D, C6E, R5A, R5B, R5C are combined in one unit.
When replacing items separately C6C and C6D should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	REGAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	20-101A	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume-See note
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

Note: Some Models may use alternate control (Part #20-130)

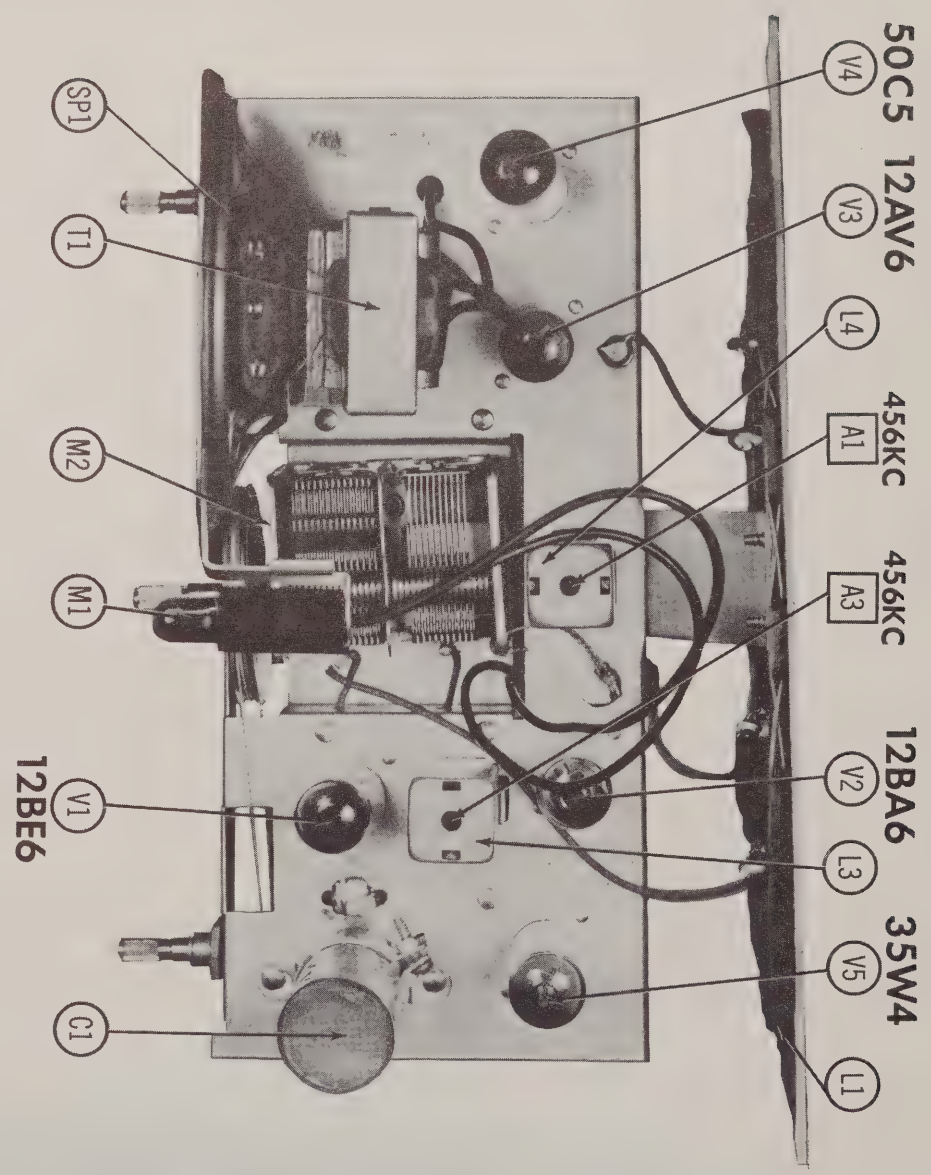
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R2	22KΩ	½	65-105	BTS-22K	
R3	240Ω	½	65-159		
R4	2.2Meg	½		BTS-2.2Meg	
R5A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	♦50-142	BTS-470K	
C	470KΩ	½		BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R6	150Ω	½	65-103	BTS-150	
R7	25Ω	½	65-101		
R8	1200Ω	2	65-217	BTB-1200	
R9	220KΩ	½	65-108	BTS-220K	

♦ Items R5A, R5B, C5C, C6A, C6B, C6C, C6D, C6E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		REGAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.6KΩ	3.4Ω	185Ω	.54Ω	Part of Spkr.	A-3876	A-2928	RO-302	S-1X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	REGAL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.4Ω	110-117	ST-113 Mod. P4-X	4A07	

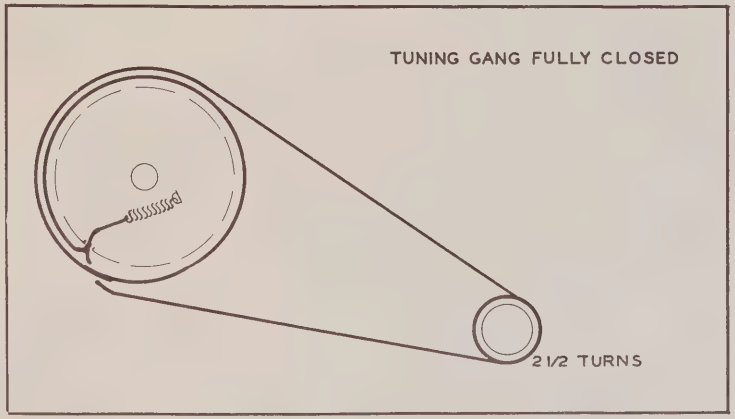
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	REGAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	.1Ω	2Ω	30-149				
L2	Osc. Coil	5.5Ω		30-127			71-Osc. *	Tapped @ .7Ω
L3	Input IF	14.5Ω	14.5Ω	30-154	16-6758	BC-352	12-C1	
L4	Output IF	14.5Ω	14.5Ω	30-154	16-6758	BC-353	12-C2	

* Drill mounting hole.

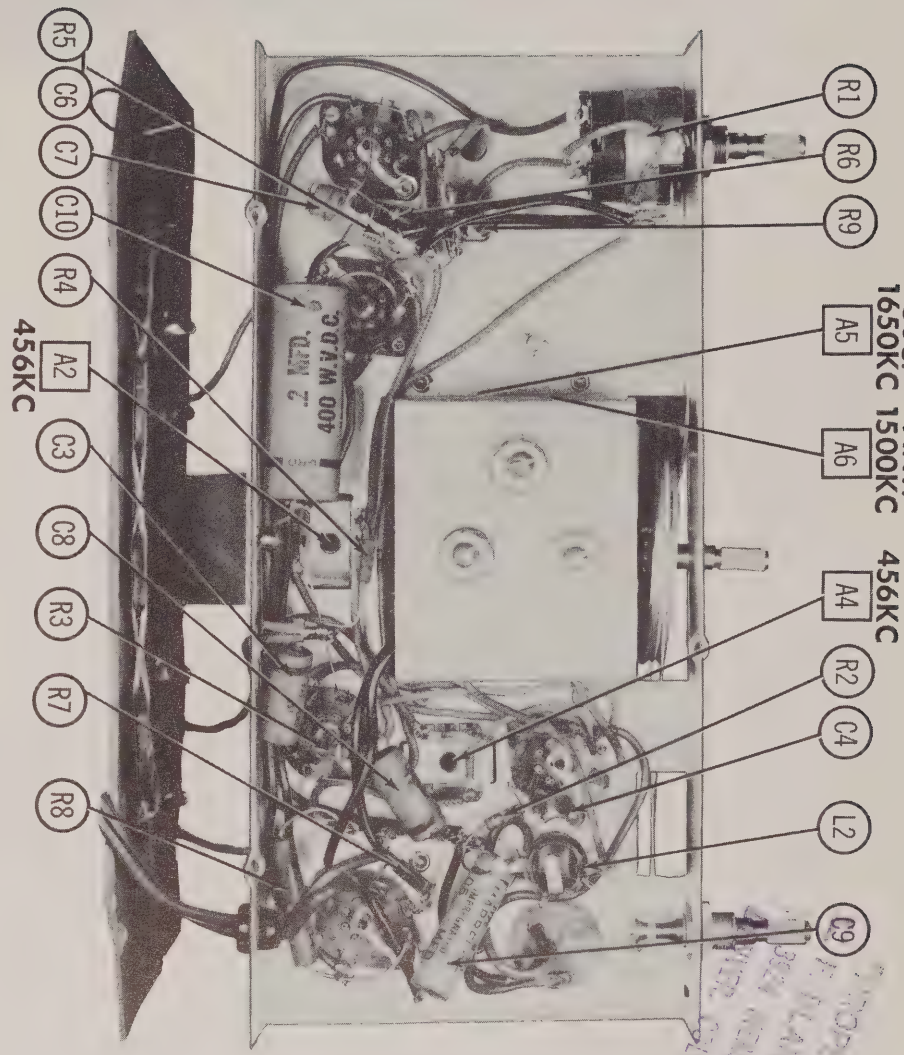
MISCELLANEOUS

ITEM No.	PART NAME	REGAL PART No.	NOTES
M1	Dial Light		Type #47
M2	Tuning Capacitor	40-134	24-425, 40-220MMF

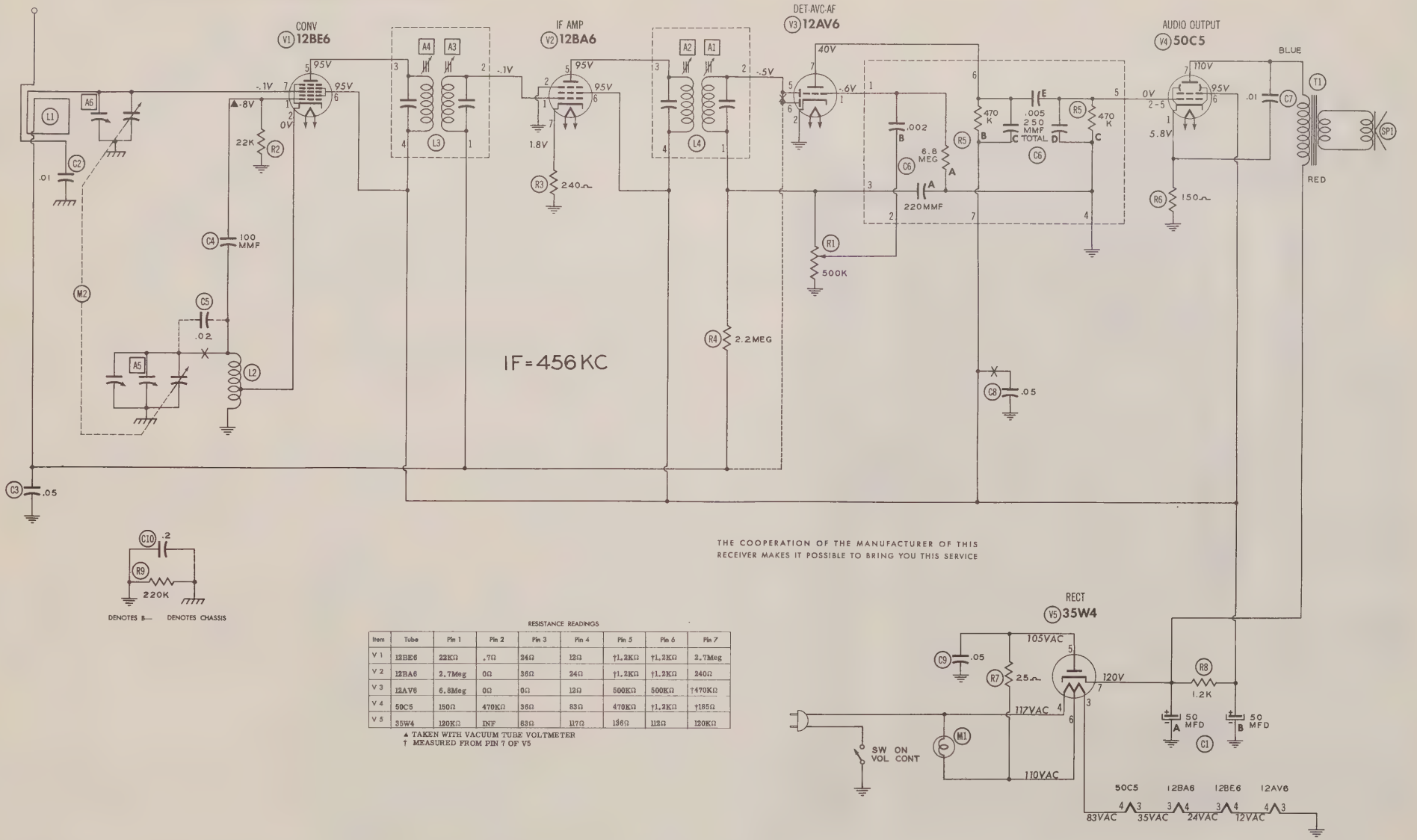


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



REGAL MODEL 271



RESISTANCE READINGS

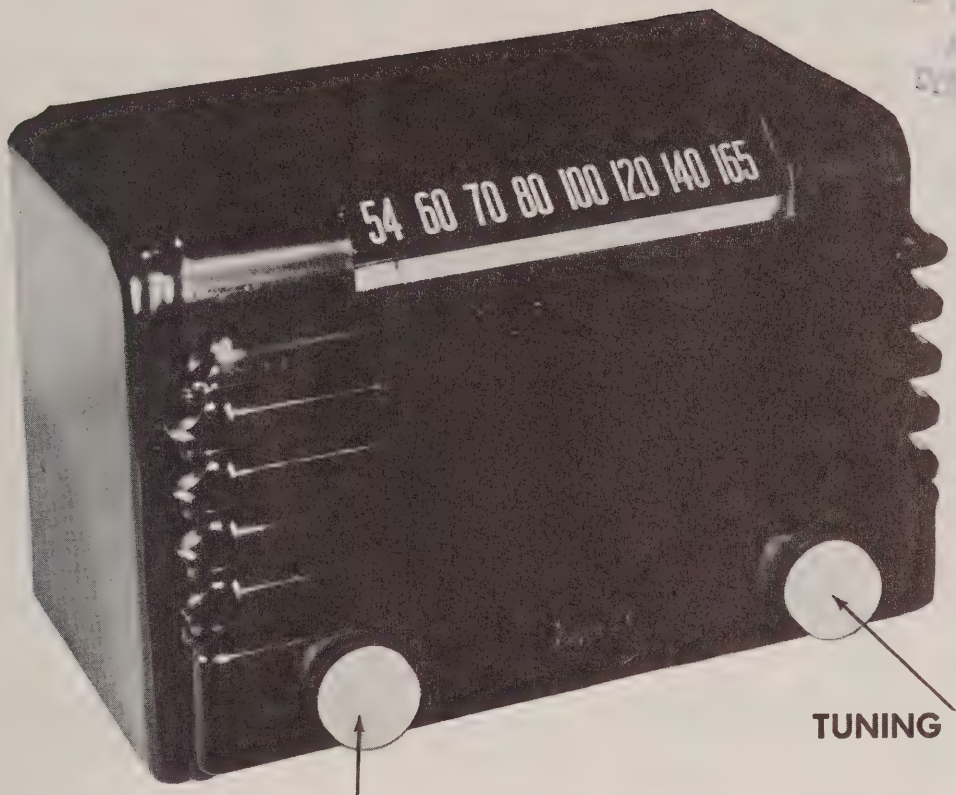
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.7Ω	24Ω	12Ω	†1.2KΩ	†1.2KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	36Ω	24Ω	†1.2KΩ	†1.2KΩ	240Ω
V 3	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	83Ω	470KΩ	†1.2KΩ	†185Ω
V 5	35W4	120KΩ	INF	83Ω	117Ω	136Ω	112Ω	120KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

REGAL
MODEL 575



REGAL
MODEL 575

TRADE NAME	Regal Model 575
MANUFACTURER	Regal Electronics Corp., 605 W. 130th. St., New York, N.Y.
TYPE SET	AC/DC Operated Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC
RATING	.25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting .
Turn tuning capacitor fully closed and set pointer 1 3/8 inches from left hand edge of pointer rail.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	456KC (400∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .00 1MFD to reduce hum modulation.
2.	"	"	1650KC	"	"	A3	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. If adjustment range of A3 is not sufficient adjust trimmer at other end of stator plates.
3.		Loop	1500KC	Tune to 1500KC signal	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		REGAL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	REGAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	60-101	PRS150/50-50		EDL5515		2N521	TVA-2453	Red Green
B	50	150								
C2	.01	200	50-102	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	Note 1
C3	100	500	55-102	1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C4	7000	500								Note 2
C5	250	500	55-104	1468-00025	D6-251	5W5T25	GP2K-251	MC240	1FM-325	
C6	.05	400	50-104	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C7A	220									
B	.002									
C	.005			♦PC-150		♦1408-01			♦103C4	
D	250									
E										
C8	.01	400	50-102	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9	.05	400	50-103	P488-05		PTE4S5		PT415	4TM-S5	
C10	.2	400	50-120	484-2		PTE4P22		TP429	4TM-P22	

Note 1. Not used in all models.
Note 2. Some models use .01MFD in this application (Part No. 50-102).
Note 3. Some models use 500MMF in this application.
♦ Items C7A, C7B, C7C, C7D, C7E, R8A, R8B, R8C are combined into one unit. When replacing items separately C7D and C7E should total 250MMF.
Some models use separate items:
C7A - 250MMF (Part No. 55-103)
C7B - .006MFD (Part No. 50-101)
C7C - .01MFD (Part No. 50-102)
C7D - 250MMF (Part No. 55-103)
C7E - Not used.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	REGAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	20-103	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

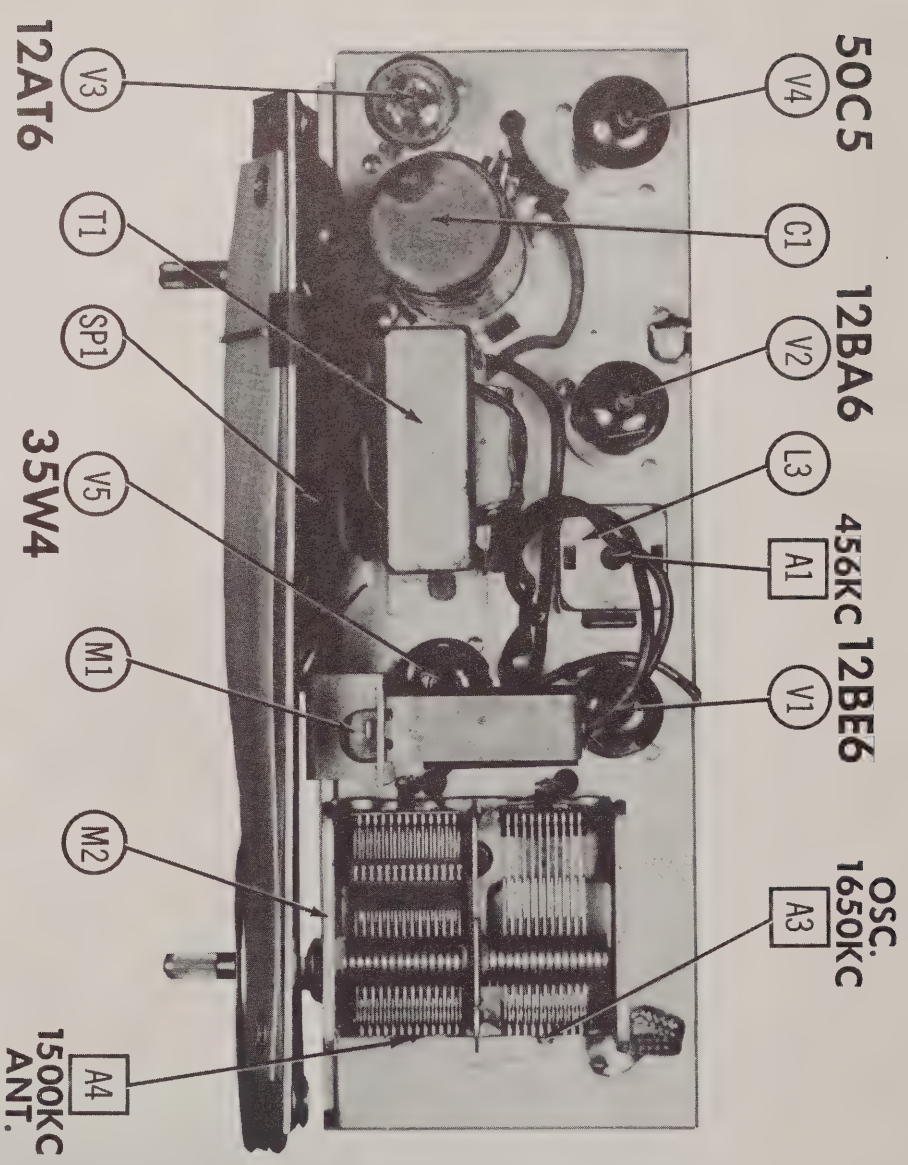
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R2	470Ω	½	65-172		
R3	15KΩ	½	65-155	BTS-15K	
R4	150Ω	½		BTS-150	Note
R5	6800Ω	½	65-131	BTS-6800	
R6	100KΩ	½	65-125	BTS-100K	
R7	2.2Meg	½	65-110	BTS-2.2Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R8A	6.8Meg	½	♦	BTS-6.8Meg	
B	470KΩ	½		BTS-470K	
C	470KΩ	½		BTS-470K	
R9	150Ω	½	65-103	BTS-150	
R10	1500Ω	2	65-143	BTB-1500	
R11	24Ω	½	65-87		
R12	39Ω	½		BTS-39	Note
R13	220KΩ	½	65-108	BTS-220K	

Note: Not used in all Models.
♦ Items R8A, R8B, R8C, C7A, C7B, C7C, C7D, C7E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		REGAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.6KΩ	3.3Ω	174Ω	.88Ω	P-420F	A-3825 ①	A-2902 ①	RO-302 ①	S-1X ①	① Bend mtg. tabs down file out slots, mount on original mtg. bracket.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	REGAL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	110123N	ST-113 Mod. P4-X	4A07	

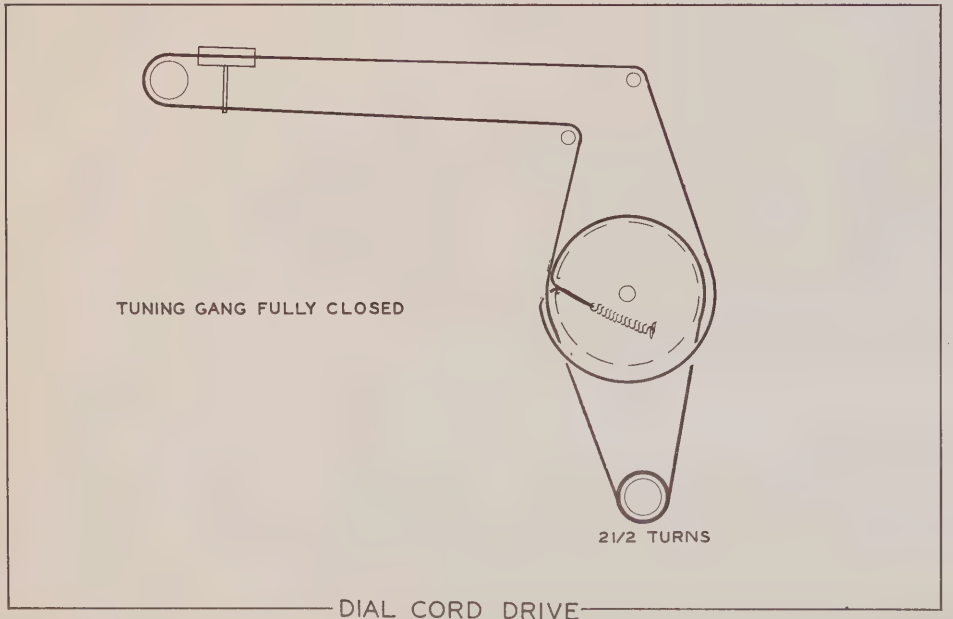
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	REGAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	1.8Ω		30-149				
L2	Osc. Coil	5.5Ω		65-172			71-Osc.*	Tap @ .7Ω
L3	IF Trans.	25Ω	24Ω	30-201				

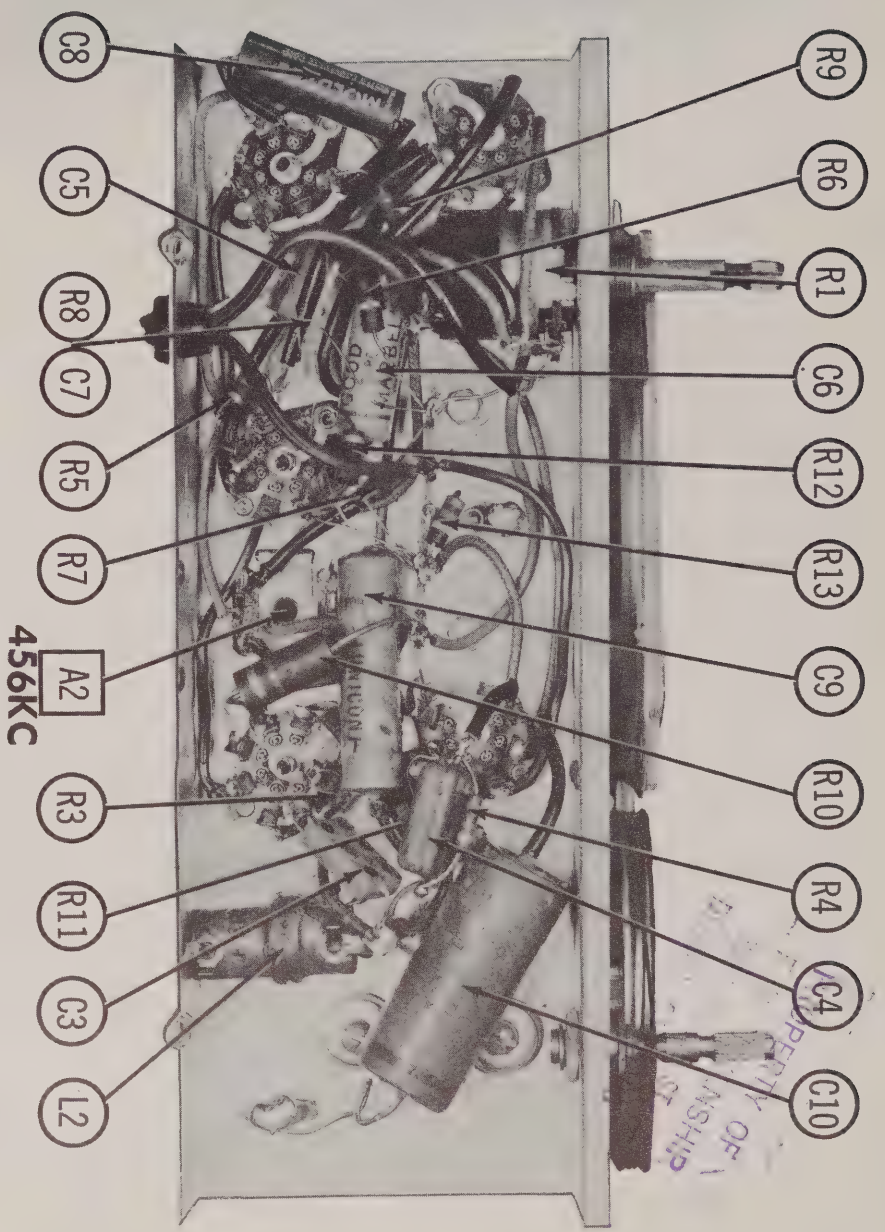
* Drill mounting hole.

MISCELLANEOUS

ITEM No.	PART NAME	REGAL PART No.	NOTES
M1	Dial Light		Type #47
M2	Tuning Capacitor	40-101	31-442MMF, 40-220MMF

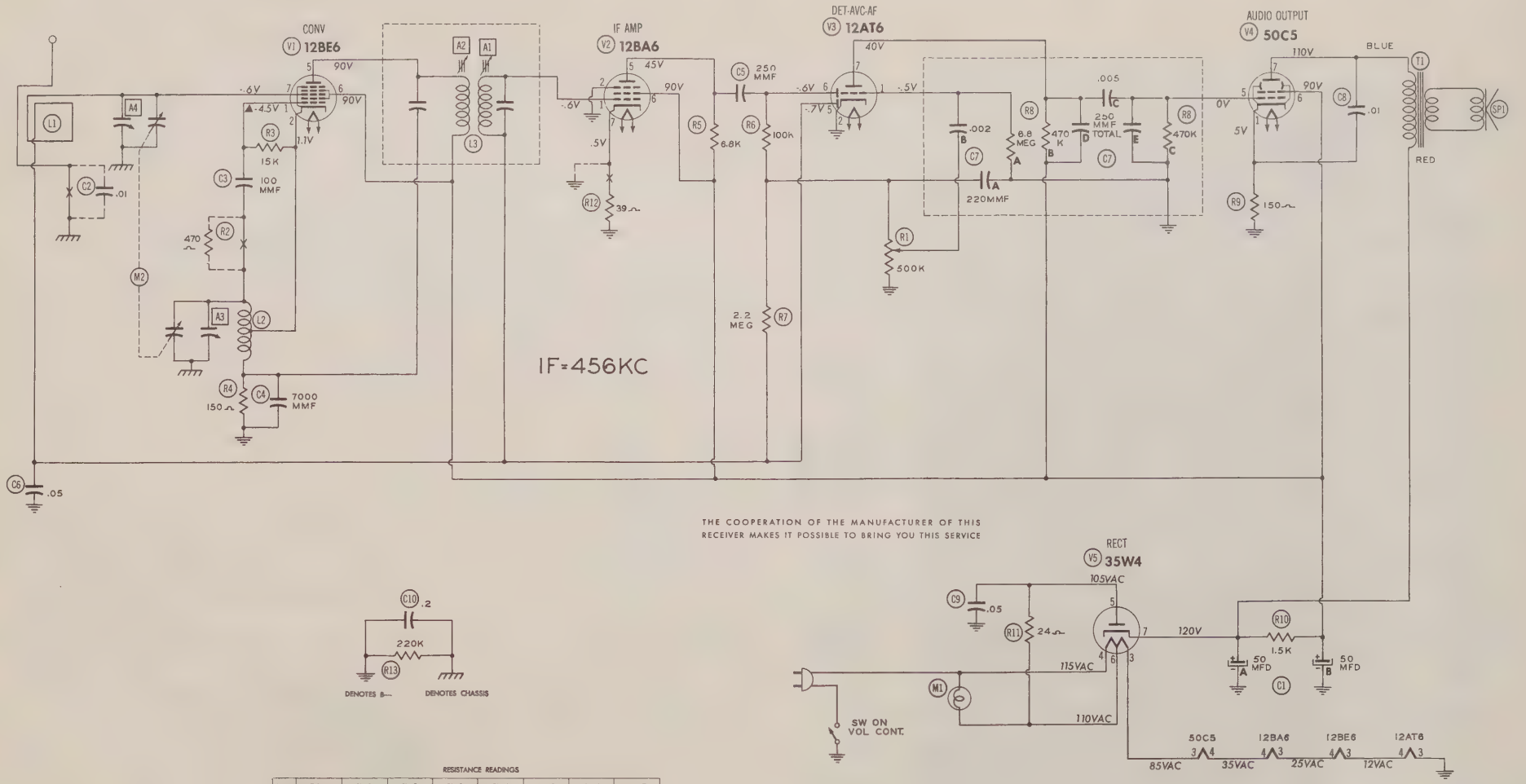


CHASSIS—BOTTOM VIEW



REGAL MODEL 575

REGAL MODEL 575



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	15KΩ	120Ω	12Ω	24Ω	†1.5KΩ	†1.5KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	24Ω	36Ω	†8.3KΩ	†1.5KΩ	39Ω
V 3	12AT6	6.8Meg	0Ω	0Ω	12Ω	2.7Meg	600KΩ	†220KΩ
V 4	50C5	150Ω	INF	85Ω	36Ω	470KΩ	†1.5KΩ	†174Ω
V 5	35W4	INF	0Ω	85Ω	120Ω	136Ω	111Ω	120KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

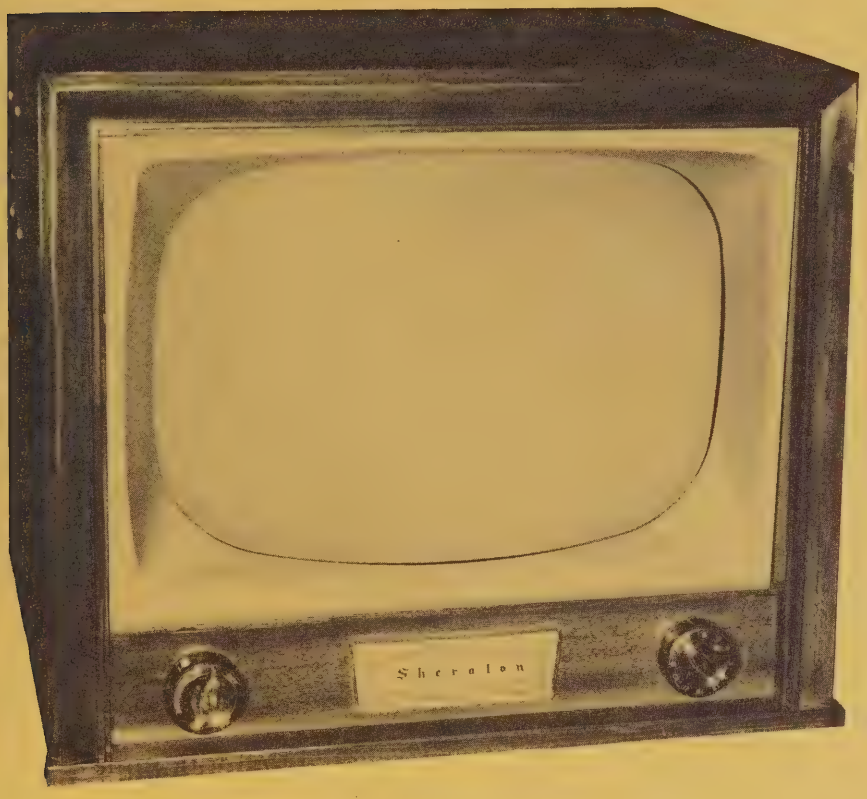
*TRADE MARK

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 21MT10U

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

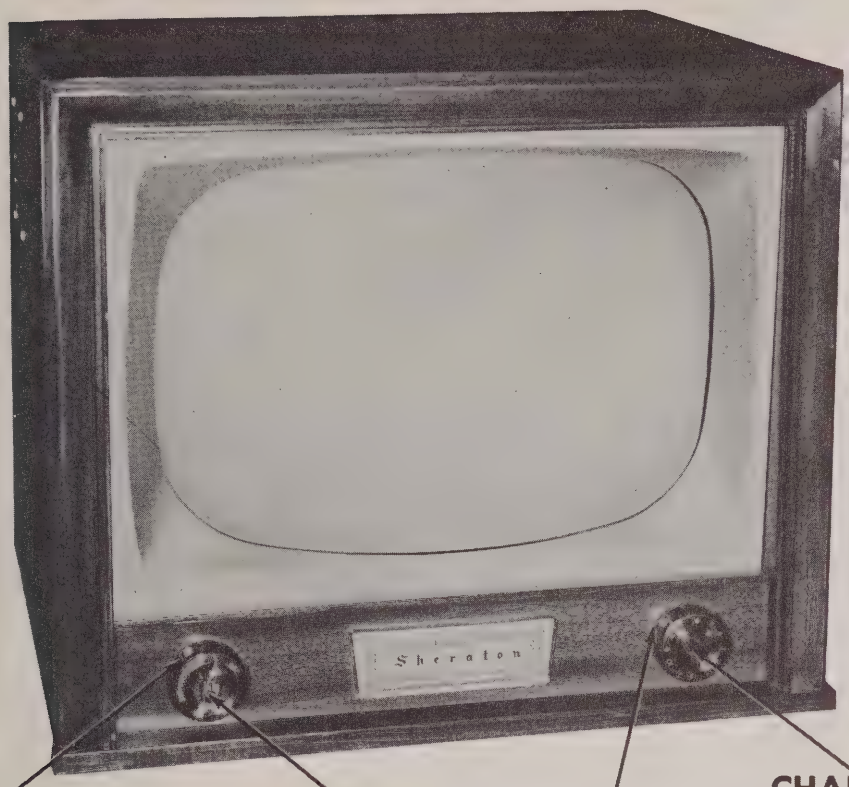
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7-53 SET 210 FOLDER 9

PHOTOFACT* Folder
*TRADE MARK

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)



SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

SHERATON MODEL 21MT10U

TRADE NAME	Sheraton Models 17MT20, 21BC10, 21BD10, 21BT10, 21MC10, 21MD10, 21MT10U (Ch. 530 DX Series).
MANUFACTURER	Sheraton Television Corp., 200 River St., Red Bank, New Jersey
TYPE SET	Television Receiver
TUBES	Twenty-Three
POWER SUPPLY	110-120 Volts AAC-60 Cycle RATING 1.64 Amp@ 117 Volts
TUNING RANGE–	Channels 2 thru 13, Video IF 26.25MC, Sound IF 21.75MC (Intercarrier)

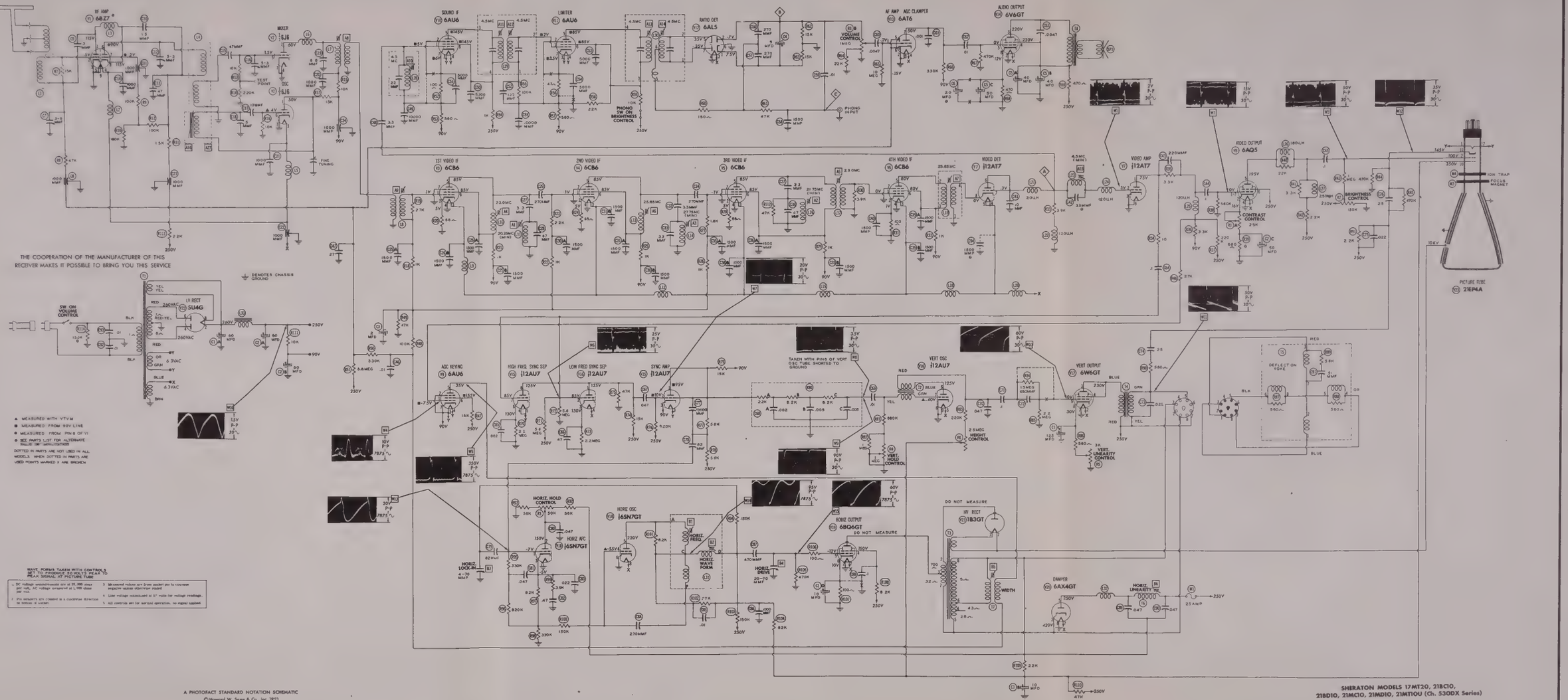
INDEX

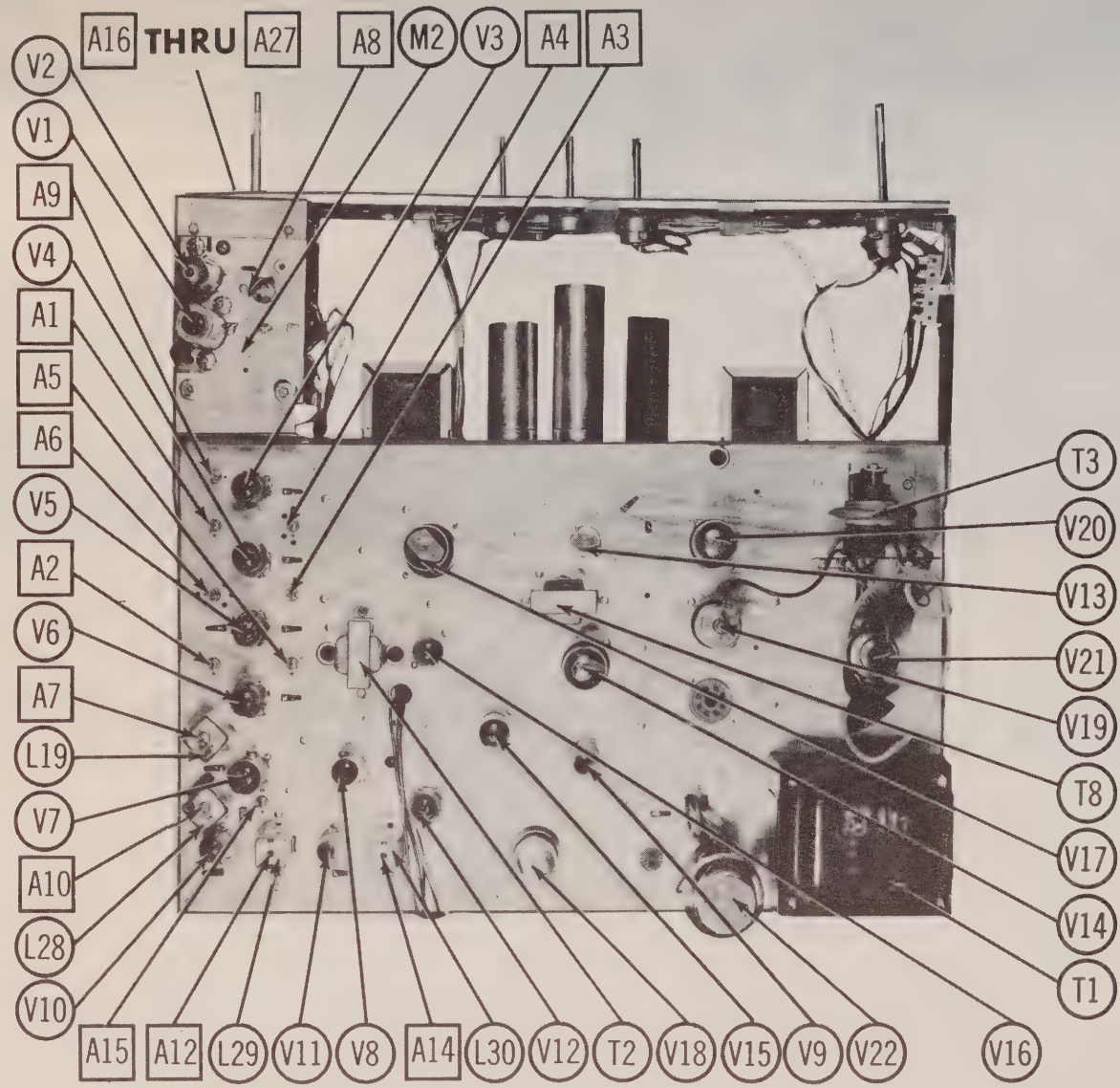
Alignment Instructions 6, 7
Disassembly Instructions 18
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 14, 15, 16
Photographs
Cabinet-Rear View 11
Capacitor Identification 4, 9
Chassis-Top View 3
RF Tuner 10
Resistor Identification 19, 20
Photographs (Cont)
Trans, Inductor & Alignment Identification 13
Resistance Measurements 8
Servicing in the Field 18
Schematic 2
Trouble Shooting Aids 12, 17
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7-53 SET 210 FOLDER 9


SHERATON MODELS 17MT20, 21BC10, 21BD10,
21MC10, 21MD10, 21MT10U (Ch. 530DX Series)
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DENOTES CHASSIS GROUND
RF AMP 6BZ7
MIXER 6JS
OSC 6JS
SOUND IF 6AU6
LIMITER 6AU6
RATIO DET 6AL5
AF AMP AGC CLAMPER 6AT6
AUDIO OUTPUT 6V6GT
1ST VIDEO IF 6CB6
2ND VIDEO IF 6CB6
3RD VIDEO IF 6CB6
4TH VIDEO IF 6CB6
VIDEO DET i12AT7
VIDEO AMP i12AT7
VIDEO OUTPUT 6AQ5
PICTURE TUBE 21EP4A
LV RECT 5U4G
AGC KEYING 6AU6
HIGH FREQ. SYNC SEP i12AU7
LOW FREQ SYNC SEP i12AU7
SYNC AMP i12AU7
VERT OSC i12AU7
VERT OUTPUT 6W6GT
HORIZ. HOLD CONTROL
HORIZ AFC 6SN7GT
HORIZ OSC 6SN7GT
HORIZ OUTPUT 6BQ6GT
HV RECT 1B3GT
DAMPER 6AX4GT
DO NOT MEASURE
▲ MEASURED WITH VTVM
■ MEASURED FROM 90V LINE
● MEASURED FROM PIN 8 OF V1
⊕ SEE PARTS LIST FOR ALTERNATE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953
SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)



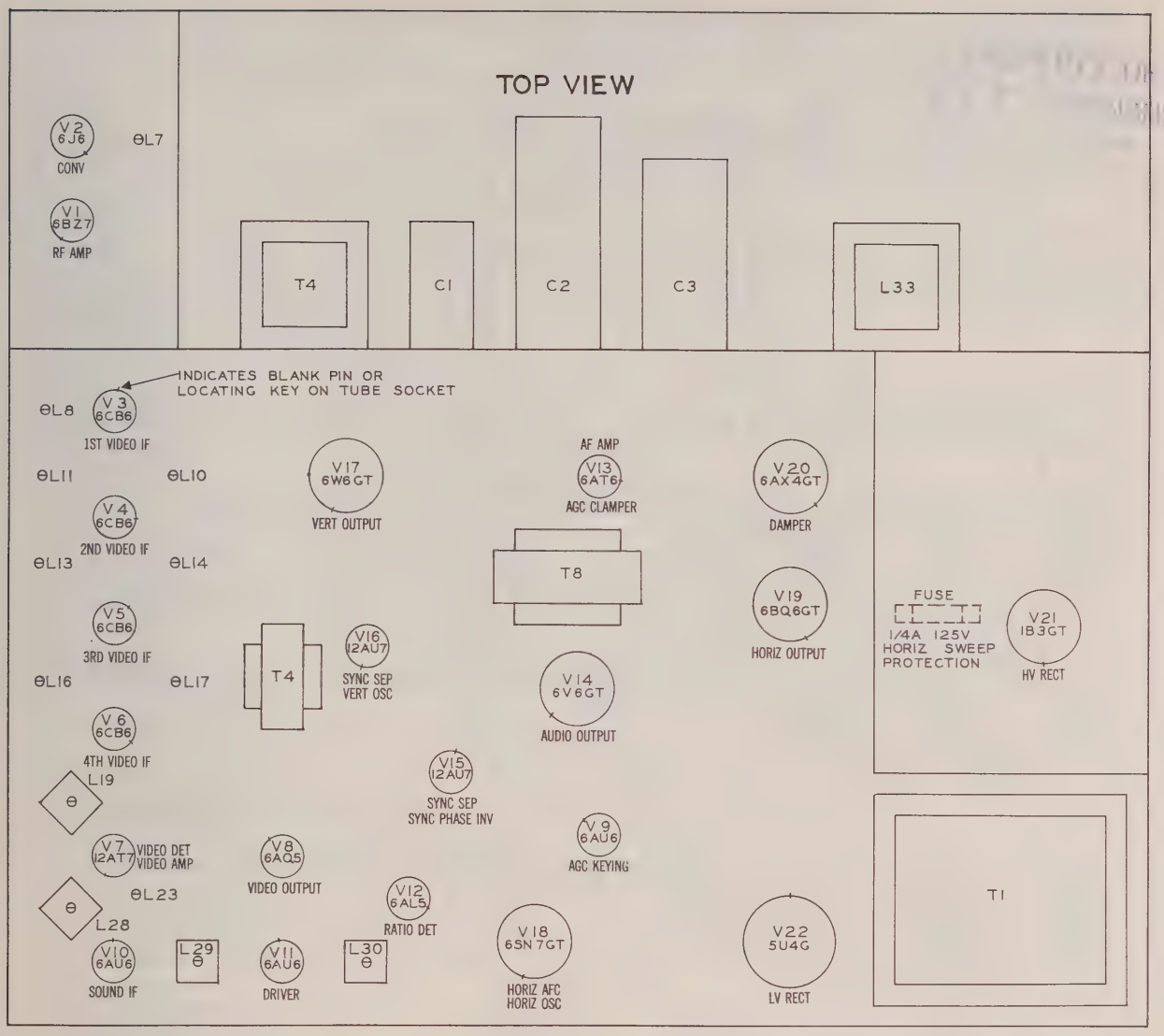
CHASSIS TOP VIEW

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V22

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster -V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V8, V23
Has pic, no sound - V10, V11, V12, V13, V14
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V15, V16
No horiz. sync - V15, V18
No vert. or horiz. sync - V15, V16

SWEEP FAILURE
No raster, has sound - V18, V19, V20, V21, V23 Fuse (M1)
No vertical deflection - V16, V17
Poor vert. linearity or foldover - V16, V17
Poor horiz. linearity or foldover - V18, V19, V20
Narrow picture - V18, V19, V20, V21, V22
Vert. off freq. - V15, V16
Horiz. off freq. - V15, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal oscillator tube, V18.

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Short the grid (pin 1) of 6AU6 (V9) to chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.01MFD	High side to pin 1 (grid) of 6CB6 (V3). Low side to chassis.	Not used	20.25MC	Any not used locally	Use VTVM. DC probe thru 27KΩ to point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	"	21.75MC	"	"	A2	"
3.	"	"	"	27.75MC	"	"	A3	"
4.	"	"	"	23.0MC	"	"	A4, A5	Connect the negative lead of a 1.5 volt battery to the ungrounded side of C3. Connect the positive lead to chassis. Adjust for maximum deflection.
5.	"	"	"	25.65MC	"	"	A6, A7	"
6.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	Set Sweep to a low band channel. (10MC Swp)	21.75MC 26.25MC	Low band channel not used locally.	Vert. amp of scope thru detector (Fig.1) to pin 5 (plate) of 6CB6 (V3). Low side to chassis.	A8, A9	Replace 1.5 Volt battery in step 4 with a 3 Volt battery. Adjust for response curve similar to Fig. 2 .

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Connect 3 volt bias battery as in Step 6 of Video IF Alignment.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over converter tube. Low side to chassis.	24MC (10MC Swp)	20.25MC 21.75MC 22.65MC 26.25MC 27.75MC	Any non-interfering channel	Vert. Amp. thru 27KΩ to point (A). Low side to chassis.		Check for response similar to Fig. 3. If necessary retouch A4 thru A7 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to pin 1 (grid) of 6CB6 (V6). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A10, A11, A12, A13	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to point (C). Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.01MFD	High side to pin 1 (grid) of 6CB6 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A10, A11, A12, A13	Disconnect stabilizing capacitor C4. Adjust for curve of maximum amplitude and symmetry as in Fig. 4.
9.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A14	Reconnect capacitor C4. Adjust so that 4.5 MC occurs at center of crossover lines as in Fig. 5. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

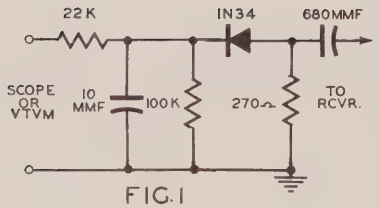


FIG.1

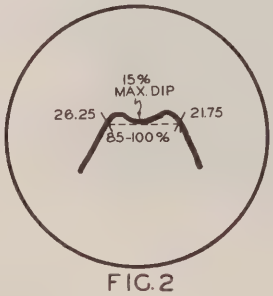


FIG.2

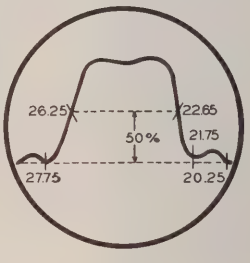


FIG.3

ALIGNMENT INSTRUCTIONS (CONT.)

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.01MFD	High side to pin 1 (grid) of 6CB6 (V6). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector to pin 2 of picture tube. Common to chassis.	A15	Adjust for MINIMUM deflection.

OSCILLATOR ALIGNMENT

The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 27KΩ to point (A). Low side to chassis.	A16	Adjust to place sound marker in notch as in Fig. 6. Video marker should be at 50%.
			207MC (10MC Swp)	205.75MC 209.75MC	12		A17	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A18	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A19	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A20	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A21	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A22	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A23	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A24	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A25	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A26	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A27	

THE RF AND MIXER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

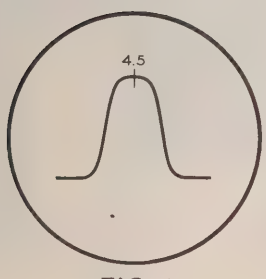


FIG. 4

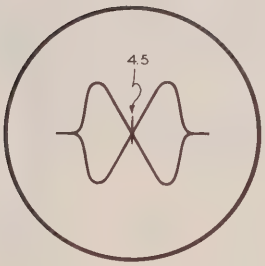


FIG. 5

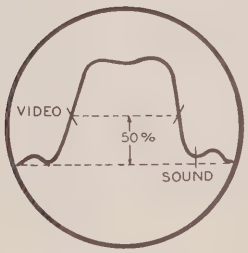
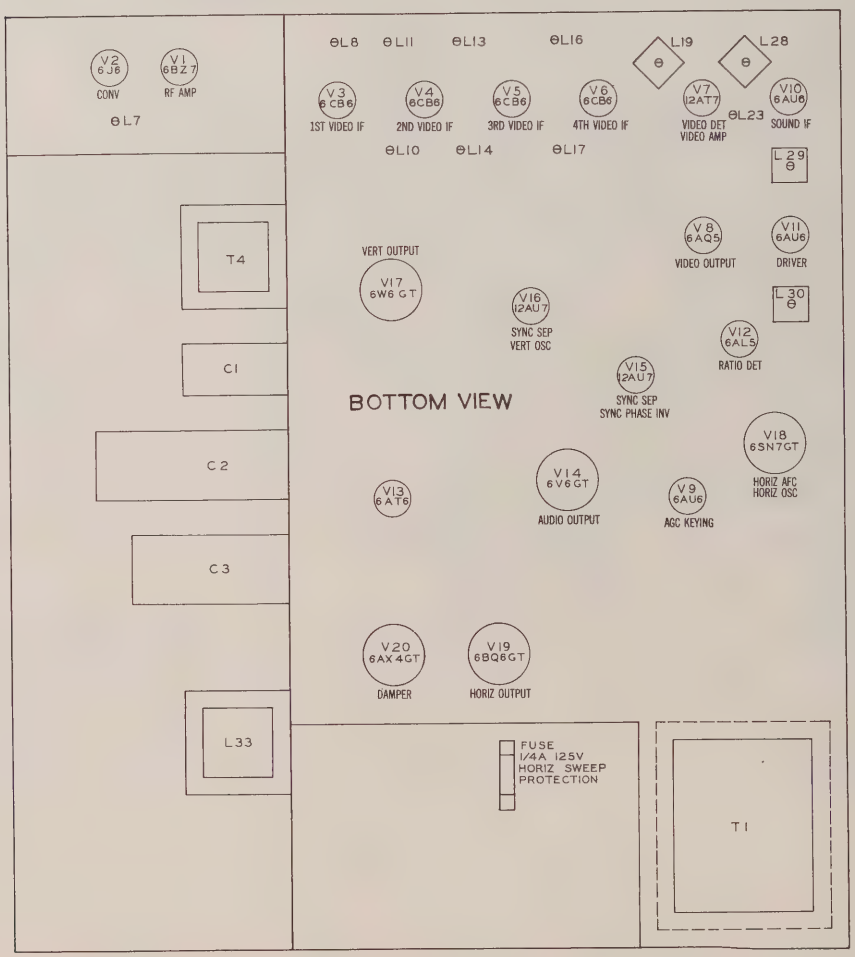


FIG. 6

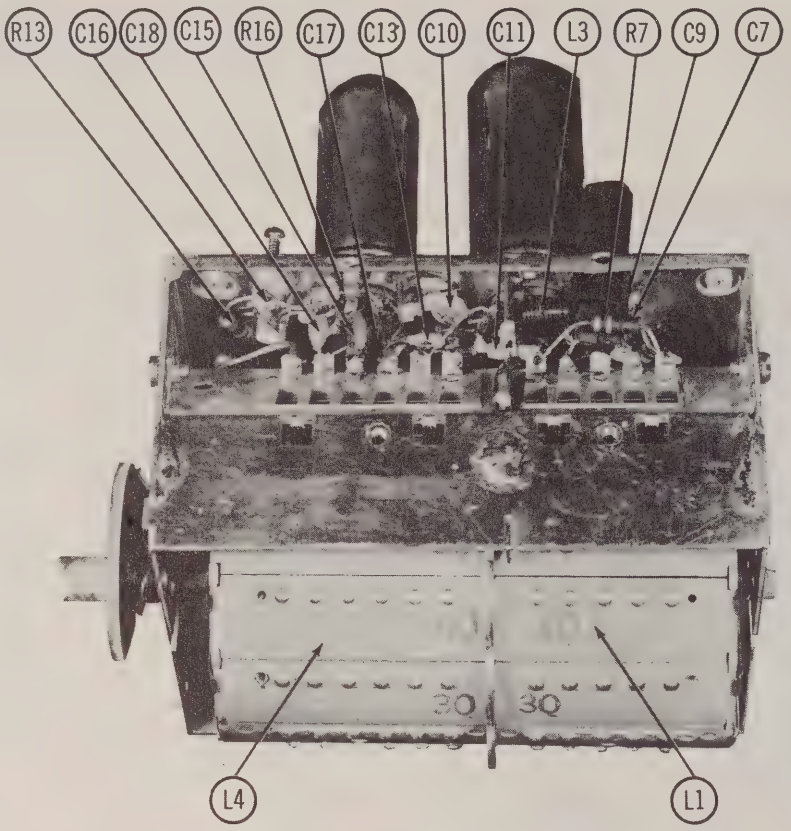
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	INF	520KΩ	0Ω	.1Ω	0Ω	†3.7KΩ	†170KΩ	INF	0Ω
V 2	6J6	†20KΩ	†1.5KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	48KΩ	68Ω	.1Ω	0Ω	†6.5KΩ	†6.5KΩ	0Ω		
V 4	6CB6	50KΩ	68Ω	.1Ω	0Ω	†6.5KΩ	†6.5KΩ	0Ω		
V 5	6CB6	50KΩ	68Ω	.1Ω	0Ω	†6.5KΩ	†6.5KΩ	0Ω		
V 6	6CB6	.6Ω	100Ω	.1Ω	0Ω	†6.5KΩ	†6.5KΩ	0Ω		
V 7	12AT7	†12.5KΩ	3.9KΩ	0Ω	.1Ω	.1Ω	3.9KΩ	3.9KΩ	.8Ω	0Ω
V 8	6AQ5	560KΩ	700Ω	.1Ω	0Ω	†2.2KΩ	†53Ω	560KΩ		
V 9	6AU6	†35KΩ	†5.5KΩ	†5.5KΩ	†5.5KΩ	150KΩ	†15KΩ	†5.5KΩ		
V 10	6AU6	†6.1KΩ	†6.2KΩ	†5.5KΩ	†5.5KΩ	†6.5KΩ	†6.5KΩ	†6.2KΩ		
V 11	6AU6	†107KΩ	†6.1KΩ	†5.5KΩ	†5.5KΩ	†7.7KΩ	†7.7KΩ	†6.1KΩ		
V 12	6AL5	15KΩ	15KΩ	0Ω	.1Ω	INF	0Ω	INF		
V 13	6AT6	10Meg	0Ω	0Ω	.1Ω	490KΩ	490KΩ	†335KΩ		
V 14	6V6GT	INF	0Ω	†845Ω	†545Ω	470KΩ	0Ω	.1Ω	†520Ω	
V 15	12AU7	†7.5KΩ	†820 KΩ	†5.5KΩ	†5.5KΩ	†5.5KΩ	†10KΩ	†3Meg	2.2Meg	†5.5KΩ
V 16	12AU7	†13.8KΩ	†3Meg	2.2Meg	.1Ω	.1Ω	†1 Meg	850KΩ	0Ω	0Ω
V 17	6W6GT	INF	.1Ω	†750Ω	†750Ω	2.2Meg	1.1KΩ	0Ω	1.7KΩ	
V 18	6SN7GT	1.5Meg	†60KΩ	410KΩ	480KΩ	†70KΩ	0Ω	0Ω	.1Ω	
V 19	6BQ6GT	†70KΩ	0Ω	INF	†8.2KΩ	470KΩ	470KΩ	.1Ω	100Ω	Top Cap ●32Ω
V 20	6AX4GT	†61Ω	INF	55KΩ	INF	64Ω	INF	.1Ω	0Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ▲732Ω
V 22	5U4G	INF	30KΩ	INF	7.7Ω	INF	7.4Ω	INF	30KΩ	
V 23	21EP4A	†5.5KΩ	1.1Meg	Pin 10 †35KΩ	Pin 11 †240KΩ	Pin 12 †5.5KΩ				

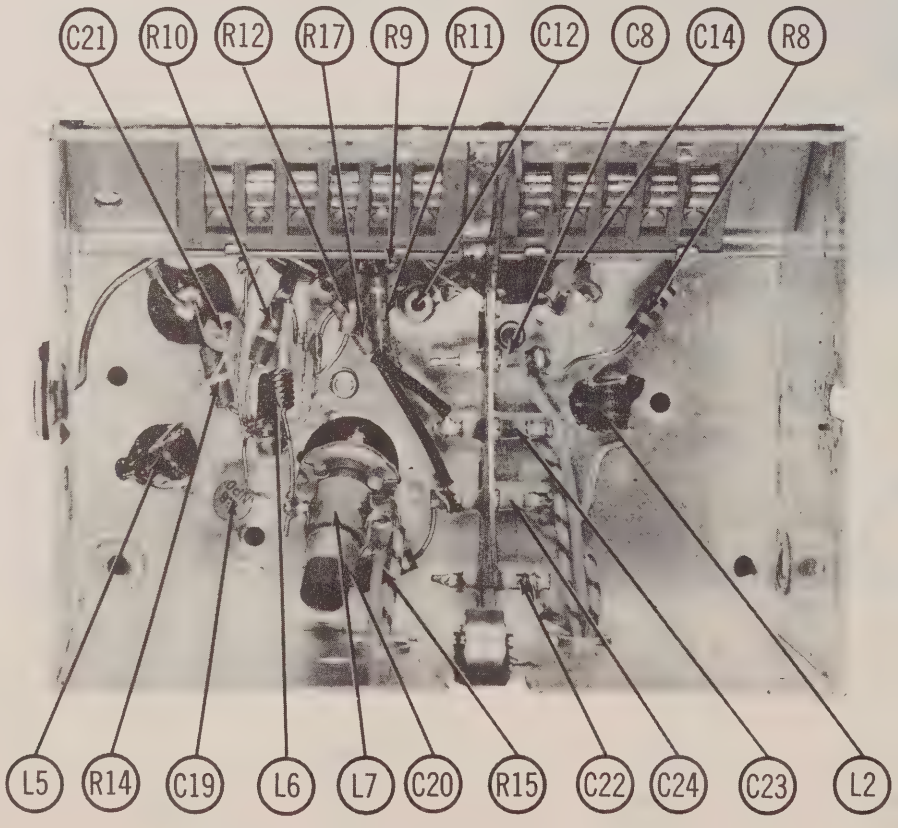
▲ MEASURED FROM PIN 3 OF V20.
† MEASURED FROM PIN 2 OF V22.



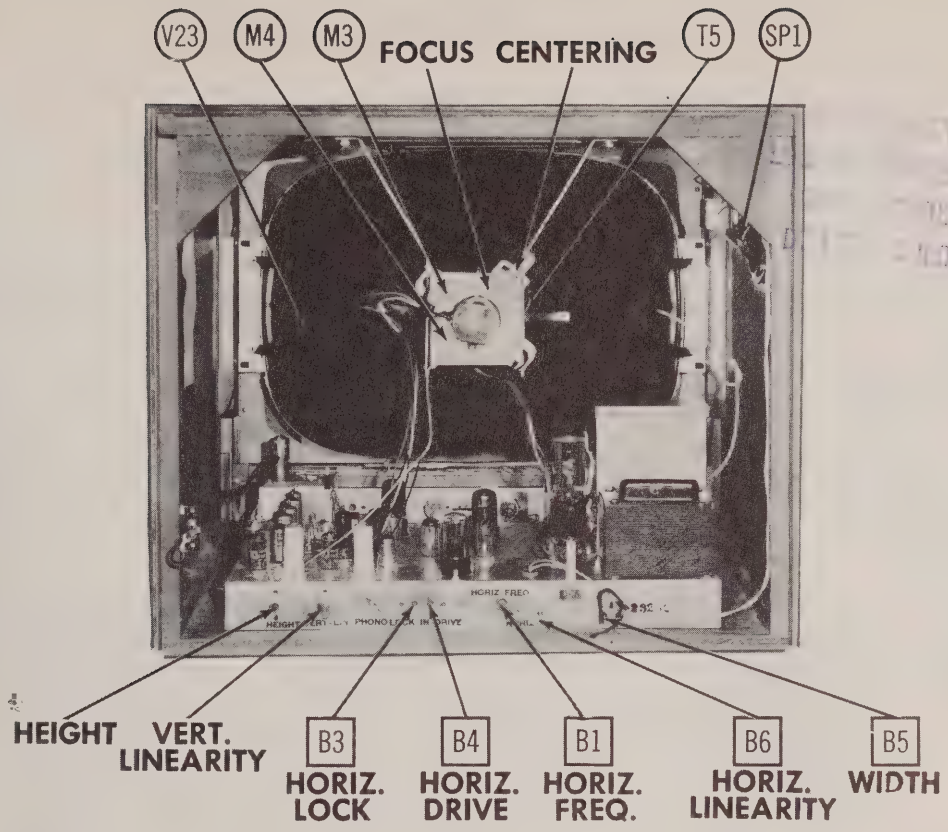
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV signal, preferably a test pattern.

Turn the horizontal hold control fully clockwise.

The picture show s a tendency to lose sync or lose sync entirely, with up to $4\frac{1}{2}$ diagonal bars sloping down to the right.

Turn the horizontal hold slowly to the extreme counter clockwise position. The picture should remain in sync. Momentarily switch to another channel and back again. The picture should lose sync, with several bars sloping down to the left. If the receiver passes the above checks no horizontal adjustment is necessary.

If horizontal adjustment is necessary, turn the horizontal hold control fully clockwise.

Adjust the horizontal frequency slug (B1) until picture goes out of sync, with a vertical bar or up to $4\frac{1}{2}$ diagonal bars sloping down to the right. Turn the horizontal hold control fully counter clockwise and momentarily remove the signal so that sync is lost. Turn the hold control slowly clockwise and note the least number of bars just before sync pull in. If the number is more than $3\frac{1}{2}$ adjust the lock-in range trimmer (B3) slightly clockwise. If less than $2\frac{1}{2}$ bars are present at sync lock-in adjust B3 counter clockwise.

HORIZONTAL WAVEFORM ADJUSTMENT

Adjustment of the horizontal waveform slug (B2) should not be made unless it is known to be necessary. Connect the vertical input of an oscilloscope through a low capacity probe to lug "C" of L31. View the waveform on the scope and adjust B2 for broad and narrow peaks of equal height as in Fig. 7. If necessary keep the picture in sync by means of B1 or the horizontal hold control.

DRIVE WIDTH AND LINEARITY ADJUSTMENT

Adjust the horizontal drive trimmer (B4) counter clockwise as far a possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the width slug (B5) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B6) for a picture that is symmetrical from left to right.

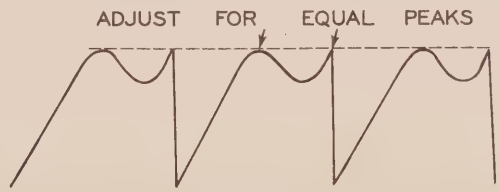


FIG. 7

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Follow procedure outlined under LOSS OF HIGH VOLTAGE.

INSUFFICIENT SWEEP

Substitute V18, V19, V20, and V22. Check amplitude of waveform W15;

If Insufficient	If Sufficient
Check all components of horizontal oscillator. Check coupling network between V18 and V19, Check drive control.	Check components of V19, particularly C88. Check T3, T5A, T7 and associated components. Check damper circuit.

DRIVE LINES

Substitute V18 and V19. Check B4 and coupling network between V18 and V19.

COMPRESSED AT LEFT SIDE

Substitute V19 and V20. Check T3, T5A and T6. Check damper circuit components.

FOLDS

Follow procedure ottlined under COMPRESSED AT LEFT SIDE.

VERTICAL

LOSS OF SWEEP

Substitute V16 and V17. Check waveform W10;

If Unsatisfactory	If Satisfactory
Check T2 and other components of the vertical oscillator. Check coupling capacitor between V16B and V17.	Check T4 and T5B. Check other components of the vertical output stage.

INSUFFICIENT SWEEP

Follow procedure outlined under LOSS OF SWEEP. Check power rectifier.

COMPRESSED AT BOTTOM

Substitute V17. Check C1C and C71.

COMPRESSED AT TOP

Substitute V17. Check coupling and waveshaping network between V16B, and V17.

FOLDS

Check coupling and waveshaping network between V6B and V17. Check components of vertical output stage.

SYNC

HORIZONTAL

LOSS OF SYNC

Substitute V15, V16 and V18. Check waveform W13;

If Unsatisfactory	If Satisfactory
Check waveform W7;	Check adjustment of the syncroguide following procedure outlined in following section. Check components of V18.

Check waveform W7;

If Unsatisfactory	If Satisfactory
Check components of V15A and V16A. Check coupling system between the video amplifier and the sync clippers. Also check the coupling network between the sync clippers and the syncroguide.	Check components of sync inverter tube and coupling network between V15B and V18.

CRITICAL SYNC

Follow procedure outlined under LOSS OF SYNC .

PULLING PICTURE

Substitute V18. Check coupling capacitor C78 for leakage. Check V19 for filament to cathode leakage.

VERTICAL

LOSS OF SYNC

Substitute V15, V16 and V17. Check waveform W8 and W9;

If Unsatisfactory	If Satisfactory
Check components of V15B and V16A. Check intergrating network.	Check T2 and other components associated with V16B. Check coupling and waveshaping network between V16B and V17.

CRITICAL SYNC

Follow procedure outlined under LOSS OF SYNC.

TRIGGERING

Dress filament leads well away from any grid leads of the vertical oscillator.

VIDEO

SOUND BARS

Check adjustment of A15 (4.5MC Trap) in video amplifier grid circuit. Check local oscillator adjustment and video IF alignment.

POOR RESOLUTION

Check alignment of video. If alignment cannot be brought within tolerance, substitute video IF tubes and check circuit components.

SMEAR

Check plate circuit components of video output stage. Check video IF and detector for overload.

ONE BLACK HORIZONTAL BAR

Check tuner, Video IF, Video detector and video amplifier tubes for filament to cathode leakage.

POOR CONTRAST

Check by substitution , the tuner, video IF and video amplifier tubes. Check video IF alignment. Check picture tube.

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
[illegible] BOOKENSHIP
[illegible] ADE ST.
[illegible] 100

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SHERATON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BZ7	6BZ7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	EVT-123	6CB6	7CM	
V4	2nd. Video IF Amp.	EVT-123	6CB6	7CM	
V5	3rd. Video IF Amp.	EVT-123	6CB6	7CM	
V6	4th. Video IF Amp.	EVT-123	6CB6	7CM	
V7	Video Detector - Video Amplifier	EVT-123	12AT7	9A	
V8	Video Output	EVT-128	6AQ5	7BZ	
V9	AGC Keying	EVT-111	6AU6	7BK	
V10	Sound IF Amp.	EVT-111	6AU6	7BK	
V11	Driver	EVT-111	6AU6	7BK	
V12	Horiz. Detector	EVT-101	6AL5	6BT	
V13	AF Amplifier - AGC Clamper	EVT-113	6AT6	7BT	
V14	Audio Output	EVT-117	6V6GT	7B	
V15	Sync Separator - Sync Phase Inv.	EVT-134	12AU7	9A	
V16	Sync Separator - Vert. Oscillator	EVT-134	12AU7	9A	
V17	Vert. Output	EVT-135	6W6GT	7S	
V18	Horiz. AFC - Horiz. Oscillator	EVT-104	6BN7GT	8BD	
V19	Horiz. Output	EVT-121	6BQ6GT	6AM	
V20	Damper	EVT-121	6AX4GT	6CG	
V21	HV Rectifier	EVT-106	1B3GT	3C	
V23	LV Rectifier	EVT-108	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SHERATON PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V23	21EP4A	21EP4A	12D	① Circuit changes necessary.
		21EP4 ①	12D	
		21FP4 ①	12C	
		21FP4A ①	12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SHERATON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	⊛80	375							TVL-4753	
B	⊛10	450	ECE-1003	AFH-123					TVA-1311	
C	⊛125	50								
D	10	50								
C2A	⊛80	400		AFH-91		BO72		FP229,3	TVL-2710	
B	⊛80	400	ECK-1001			BR6045A				
C	⊛50	50		DRH450/80				TC39	TVA-1716	
C3	2	50	ECE-2002	PRS150/4		BBR2-50T		TC302	TVA-1301	
C4	5	50	ECE-2001	PRS150/4		BR550		TC30	TVA-1303	
C5A	⊛40	450		AFH-52						
B	⊛40	400	ECE-1003	DRH350/50						
C	50	50								
C6	20	150		PRS150/20		BR2015A		TC45	TVA-1410	Note 1
C7	3-9				829-10					
C8	1000			CN-1-001	MFT-1000				503C-D1	
C9	3			BINNP0			NP0K-030	ZT-553		
C10	1.5			SIL.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	TCCB-V15	
C11	1000			CN-1-001	MFT-1000				503C-D1	
C12	5-3				829-3			C7565A		
C13	47									
C14	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C15	47			S147N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C16	5-3				829-10			C7565A		
C17	10			B10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	5			B5NN750	TCN-5		N750K-050	NT-505	5TCUB-V5	
C19	5.6			S1E.5NP0	TCZ-5.6		NP0K-5R6	ZT-5568	5TCCB-V56	
C20	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C21	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C22	1000			CN-1-001	MFT-1000				503C-D1	
C23	1000			CN-1-001	MFT-1000				503C-D1	
C24	1000			CN-1-001	MFT-1000				503C-D1	
C25A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C26A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C27	5.3		C-20-5F-330	S13.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C28	67			S68NP0	TCZ-68		NP0-333-670		5TCC-Q68	
C29	270		C-20-5G-271	S1270	D6-271		GP2K-271	UC-5327	5GA-T27	
C30A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C31A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C32	3.3		C-30-5F-330	S13.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C33	33									
C34	270		C-20-5G-271	S1E70	D6-271		GP2K-271	UC-5327	5GA-T27	
C35A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C36A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C37	3.3		C-30-5F-330	S13.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C38	47			S147N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C39A	1500		C-60-5M-152	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C40	1500		C-60-5M-152	S11500	D6-152	TM5D15	GP2L-152	UC-5315	5HK-D15	
C41	10		C-30-5F-1D0							Note 2
C42	33									
C43	220			S1220	D6-221		GP2K-221	UC-5322	5GA-T22	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SHERATON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C44	.1	400	P-80-L-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C45	.1	400	P-80-L-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C46	.01	400	P-80-L-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT4101	4TM-S1	
C47	.27	200	P-40-K-274	P488-25		PJ3P25		PT4025	2TM-P25	
C48	3.3		C-20-5F-330	S13.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C49	10000		C-40-5M-103	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C50	5000		C-40-5M-503	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C51	5000		C-40-5M-503	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C52	100		C-20-5F-101	S1D0	D6-101	TM6T1	GP1K-101	UC-531	5CA-T1	
C53	5000		C-40-5M-503	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C54	5000		C-40-5M-503	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C55	1000		C-40-5M-103	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C56	270		C-20-5G-271	S1270	D6-271		GP2K-271	UC-5327	5CA-T27	
C57	270		C-20-5G-271	S1270	D6-271		GP2K-271	UC-5327	5CA-T27	
C58	1500		C-20-5G-152	S11500	D6-152	TM6D15	GP2L-152	UC-5325	5HK-D15	
C59	.01	400	P-40-L-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C60	.0047	400	P-40-L-472	P488-0047	DS-472	PTE4D47	GP2-333-472	PT4247	4TM-D47	
C61	.001	400	P-40-L-102	P488-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C62	.01	400	P-40-L-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C63	.0047	1000	P-40-N-472	P1688-0047	DD-15-502	PTE5ED47		PT25247	MS-D47	
C64	.1	400	P-40-L-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C65	.002	600	P-40-L-222	P688-002	D6-203	PTE6D2	GP2-333-202	PT622	6TM-D2	
C66	.47	200	P-40-K-474	P288-47		PJ3P5		PT405	2TM-P47	
C67	.047	400	P-40-L-473	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C68A	.002			P688-002		PTE6D2		PT622		
B	.005		⊛ENW-101	P688-005	⊛PC-100	PTE6D5	⊛1405-01	PT625	⊛101C1	
C	.005			P688-005		PTE6D5		PT625		
C69	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C70	.047	600	P-80-M-473	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C71	.1	600	P-80-M-104	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C72	680	500	M-50-5F-681	1479-0007		2R5T7			MS-37	
C73	.022	400	P-40-L-223	P488-022	DD-203	PTE4S22		PT4122	4TM-S22	
C74	.25	400	P-40-L-254	P488-25		PJ3P25		PT4025	2TM-P25	
C75	.022	400	P-40-L-223	P488-022	DD-203	PTE4S22		PT4122	4TM-S22	
C76	.25	400	P-40-L-254	P488-25		PJ2P25		PT4025	2TM-P25	
C77	10000		C-40-5M-103	BPD-01	DD-1032	TM5S1	GP2-333-103	DC-511	5HK-S1	
C78	83	500	M-50-5F-820							
C79	82	500	M-50-5F-820							
C80	.047	400	P-40-L-473	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C81	.047	400	P-40-L-473	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C82	.47	200	P-40-K-474	P288-47		PJ3P5		PT405	2TM-P47	
C83	.022	400	P-40-L-223	P488-022	DD-203	PTE4S22		PT4122	4TM-S22	
C84	270	1000	M-40-10E-271					MCK327		
C85	.01	400	P-80-L-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C86	1000	1000	M-50-10F-102	1467L-EY-001		1W15D1		MCK210		
C87	470	500		1469-0005		5R5T5		MCB345		
C88	.1	400	P-40-L-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C89	.047	400	P-40-L-503	P488-047		PTE4S47		PT4147	4TM-S47	
C90	.047	400	P-40-L-503	P488-047		PTE4S47		PT4147	4TM-S47	
C91	51	1500								
C92	.01	400	B-80-L-103	489ZX-01		PJ4S1		PT411	4TM-S1	
C93	.01	400	B-80-L-103	489ZX-01		PJ4S1		PT411	4TM-S1	
C94	1500		C-40-5M-152	BPD-0015	DD-152	TM5D15	801-0015	UC-5215	5HK-D15	Note 1

Note 1, Not used in all Models.
Note 2, Some Models use 47MMF in this application.
⊛ Items C68A, C68B, C68C, R80A, R80B, R80C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SHERATON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2500Ω	½	EP-114A	QJ-465 *			UF252L	Contrast-Panel
B	1Meg	½				.	UH1T254	Volume-tapped ⓐ 250KΩ-Rear
C	Switch						US-26	Attach to R1A
R2A	150KΩ	½	EP-117A	QJ1-129	AG-52-S	AB-46	U-43	Brightness
B	Shaft		Not Req.	Not Req.	KS3-3	AK-4	Not Req.	Attach to R2A
C	Switch		Not Req.	Not Req.	SW3	KB-1	US-26	Attach to R2A
R3A	50KΩ	½	EP-115A	QJ1-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	KS3-3	AK-4	Not Req.	Attach to R3A
R4A	1Meg	½	EP-118	QJ1-137	AG-51-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	KS3-3	AK-4	Not Req.	Attach to R4A
R5A	3000Ω	2	EP-118A	WK-3000	A43-3000	VK-133	H3000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A
R6A	2.5Meg	½	EP-101A	QJ1-239	AG-94-S	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS B1T-111 & P1-212 (Panel)
† Universal Replacement -(Mallory exact duplicate part #UE3708).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SHERATON PART No.	IRC PART No.	NOTES
R7	15KΩ	½		BTS-15K	
R8	47KΩ	½			
R9	100KΩ	½		BTS-100K	
R10	160KΩ,6%	½		BTS-160K-5%	
R11	1500Ω	½		BTS-1500	
R12	100KΩ-5%	½		BTS-100K-5%	
R13	10KΩ	½		BTS-10K	
R14	220KΩ	½		BTS-220K	
R15	10KΩ	½	ERA-1021	BTS-1000	
R16	10KΩ	½	ERA-2725	BTS-2700-5%	
R17	15KΩ	½		BTS-15K	
R18	1000Ω	½	ERA-1021	BTS-1000	
R19	2700Ω-5%	½	ERA-2725	BTS-2700-5%	
R20	68Ω	½	ERA-6801	BTS-68	
R21	1000Ω	½	ERA-1021	BTS-1000	
R22	1000Ω	½	ERA-1021	BTS-1000	
R23	2200Ω-5%	½	ERA-2225	BTS-2200-5%	
R24	68Ω	½	ERA-6801	BTS-68	
R25	1000Ω	½	ERA-1021	BTS-1000	
R26	1000Ω	½	ERA-1021	BTS-1000	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SHERATON PART No.	IRC PART No.	NOTES
R27	1800Ω-5%	½	ERA-1825	BTS-1800-5%	
R28	68Ω	½	ERA-6801	BTS-68	
R29	1000 Ω	½	ERA-1021	BTS-1000	
R30	3900Ω-5%	½	ERA-3925	BTS-3900-5%	
R31	100Ω	½	ERA-1011	BTS-100	
R32	1000Ω	½	ERA-1021	BTS-1000	
R33	3900Ω-5%	½	ERA-3925	BTS-3900-5%	
R34	10KΩ	½	ERA-1031	BTS-10K	
R35	330Ω	½	ERA-3321	BTS-3300	
R36	3300Ω	½	ERA-3321	BTS-3300	
R37	220KΩ	½	ERA-2241	BTS-220K	
R38	560KΩ	½	ERA-5641	BTS-560K	
R39	680Ω	½	ERA-6811	BTS-680	Note 1
R40	22KΩ	½	ERA-2231	BTS-22K	
R41	330Ω	½	ERA-3321	BTS-3300	
R42	2200Ω	5	ERD-118		
R43	1 Meg	½	ERA-1051	BTS-1 Meg	
R44	470KΩ	½	ERA-4741	BTS-470K	
R45	470KΩ	½	ERA-4741	BTS-470K	
R46	27KΩ	½	ERA-2731	BTS-27K	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SHERATON PART No.	IRC PART No.	NOTES
R47	15KΩ	½	ERA-1531	BTS-15K	
R48	100KΩ	½	ERA-1041	BTS-100K	
R49	47KΩ	½	ERA-4731	BTS-47K	
R50	330KΩ	½	ERA-3341	BTS-330K	
R51	6.8Meg	1	ERB-6851	BTA-6.8Meg	
R52	100Ω	½	ERA-1011	BTS-100	
R53	560Ω	½	ERA-5611	BTS-560	
R54	100Ω	½	ERA-1021	BTS-1000	
R55	100KΩ	½	ERA-1041	BTS-100K	
R56	47Ω	½	ERA-4701	BTS-47	
R57	56Ω	½	ERA-5611	BTS-560	
R58	22KΩ	½	ERA-2231	BTS-22K	
R59	10KΩ	½	ERB-1031	BTA-10K	
R60	150Ω	½	ERA-1511	BTS-150	
R61	47KΩ	½	ERA-4731	BTS-47K	
R62	15KΩ	½	ERA-1531	BTS-15K	
R63	15KΩ	½	ERA-1531	BTS-15K	
R64	22KΩ	½	ERA-2231	BTS-22K	
R65	10Meg	½	ERA-1061	BTS-10Meg	
R66	330KΩ	½	ERA-3341	BTS-330K	
R67	470KΩ	1	ERA-4741	BTS-470K	
R68	470Ω	1	ERB-4701	BTA-470	
R69	470Ω	1	ERB-4701	BTB-470	
R70	2.2Meg	½	ERA-2251	BTS-2.2Meg	
R71	5.6Meg	½	ERA-5651	BTS-5.6Meg	
R72	5.6Meg	½	ERA-5651	BTS-5.6Meg	
R73	2.2Meg	½	ERA-2251	BTS-2.2Meg	
R74	15KΩ	1	ERB-1531	BTA-15K	
R75	47KΩ	2	ERC-4731	BTB-47K	
R76	820KΩ	½	ERA-8241	BTS-820K	
R77	5600Ω	1	ERB-5621	BTA-5600	
R78	5600Ω	1	ERB-5621	BTA-5600	
R79	15KΩ	½	ERA-1531	BTS-15K	
R80A	22KΩ	½		BTS-22K	
B	8200Ω	½	⊛ENW-101	BTS-8200	
C	8200Ω	½		BTS-8200	

Note 1. Some models may use a 560Ω resistors in this application.
⊛ Items R80A, R80B, R80C, C68A, C68B, C68C are combined in one unit.
Note 2. Not used in all models.

ITEM No.	RATING	REPLACEMENT DATA: SHERATON PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R81	680KΩ	ERB-6841	BTA-680K	
R82	1 Meg	ERA-1051	BTS-1 Meg	
R83	220KΩ	ERA-2241	BTS-220K	
R84	1.5Meg	ERA-1551	BTS-1.5Meg	
R85	2.2Meg	ERA-2251	BTS-2.2Meg	
R86	560Ω	ERA-5611	BTS-560	
R87	560Ω	ERA-5611	BTS-560	
R88	560Ω	ERA-5611	BTS-560	
R89	5600Ω	ERA-5621	BTS-5600	
R90	560Ω	ERA-5611	BTS-560	
R91	2200Ω	ERA-2221	BTS-2200	
R92	56KΩ	ERB-5631	BTA-56K	
R93	56KΩ	ERB-5631	BTA-56K	
R94	150KΩ	ERA-1541	BTS-150K	
R95	330KΩ	ERA-3341	BTS-330K	
R96	820KΩ	ERA-8241	BTS-820K	
R97	82KΩ-5%	ERB-8235	BTA-82K-5%	
R98	330KΩ-5%	ERB-3345	BTA-330K-5%	
R99	3900Ω	ERA-3921	BTS-3900	
R100	150KΩ-5%	ERB-1545	BTA-150K-5%	
R101	8200Ω-5%	ERA-8225	BTS-8200-5%	
R102	27KΩ	ERA-2731	BTS-27K	
R103	150KΩ	ERA-1511	BTS-150K	
R104	82KΩ	ERB-8231	BTA-82K	
R105	470KΩ	ERA-4741	BTS-470K	
R106	100Ω	ERA-1011		
R107	100Ω	ERC-1011	BW-2-100	
R108	820Ω	ERC-8221	BTB-820	
R109	22KΩ	ERB-2231	BTA-22K	
R110	47KΩ	ETB-4731	BTA-47K	
R111	10KΩ	ERD-123		
R112	47KΩ	ERA-4731	BTS-47K	
R113	2200Ω	ERB-2221	BTA-2200	
R114	150KΩ	ERA-1541	BTS-150K	Note 2

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SHERATON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC	520VCT	5VAC	6.3VAC	ET-111-2	P-8187①	P-3076			
	ⓐ 1.84A	.300ADC	ⓐ 3A	ⓐ 1.78A						
				SEC. 4						
				5.3VAC						
				ⓐ 8.3A						

① Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: SHERATON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T2	370Ω	920Ω	ET-115	A-8111	A-3000	TSO-5 ①	A-97X	2084T2 ⑫	Vert. Osc. Trans.
T3	808Ω tap ⓐ 50, 481,78Ω, 186Ω	0Ω	ET-112A	A-8135 ① ②	HVO-9 ① ②	TFB-14 ①	D-19 ① ⑤	2307T1 ⑪	Horiz. Output Trans.
T4	700Ω	7Ω	ET-110	A-8115 ⑥	A-3036	TSO-5 ①	A-99X ①	2084T2 ⑫	Vert. Output Trans.
T5A	2Ω		EL-173B	DY-11A ⑬		TT-7 ⑭	Y-19 ⑬		Horiz. Deflection Coils
B	⊛4Ω		EL-173 ⑦						Vert. Deflection Coils
T6	8Ω		EL-160			WC-12 ⑯	213R1		Horiz. Linearity Coil
T7	7Ω	82Ω	EL-181						Width & AGC Coil

① Drill one new mounting hole.
② Connect original terminal #3 to new terminal #4, original terminals 7 and 5 to new terminal 3, original terminal 6 to new terminal 2 and original terminal 8 to new terminal 1.
③ Connect original terminal 3 to new terminal 9, original terminal 7 and 5 to new terminal 7, original terminal 7 to new terminal 3 and original terminal 8 to new terminal 1.
④ Wire as in original circuit.
⑤ Connect terminal 7 to terminal 8, then connect original terminals 7 and 5 to new terminal 7 or 8. Original terminal 6 to new terminal 3. Original terminal 8 to new terminal 1.
⑥ Drill new mounting holes.
⑦ Alternate deflection yoke.
⑧ Use original horiz. deflection coil network if necessary.
⑨ Use original deflection coil network.
⑩ Connect to coded blue and red terminals.
⑪ Connect original terminal #3 to new terminal #9, original terminals 7 and 5 to new terminal #7, original terminal #6 to new terminal #3 and original terminal #8 to new terminal #1.
⑫ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SHERATON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	5KΩ	3.1Ω	320Ω	.8Ω	ET-109-2	A-3877	A-2230	HO-9 ①	S-5X	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: SHERATON PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	6"	PM	3.1Ω		ST-108 Mod. P6-X	6AI	

SHERATON MODELS 17MT20, 21BC10, 21BD10, 21MC10, 21MD10, 21MT10U (Ch. 530DX Series)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SHERATON PART No.	REPLACEMENT DATA: MEISSNER PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: MILLER PART No.	NOTES
L1	Ant. Coils	0Ω CT	0Ω					
L2	Fil. Choke	0Ω						
L3	Neutr. Coil	0Ω						
L4	RF, Mixer Grid & Osc. Coils	0Ω						
L5	Fil. Choke	0Ω						
L6	RF Choke	0Ω						
L7	Conv. Plate	.6Ω	.1Ω					
L8	1st. Video IF	.1Ω	.1Ω	EL-163	17-1063			
L9	Fil. Choke	0Ω		EL-474			4304	1.6 Microhenries
L10	2nd. Video IF	.3Ω		EL-162	17-1004	TV-103 *	6189 *	
L11	Adj. Channel picture trap	0Ω		EL-183		TV-112 *	6171 *	
L12	Fil. Choke	0Ω		EL-474			4604	1.6 Microhenries
L13	3rd. Video IF	.3Ω		EL-162	19-1020	TV-112 *	6171 *	
L14	Adj. Channel Sound Trap	0Ω		EL-182	20-1006		6171A *	
L15	Fil. Choke	0Ω		EL-474			4604	1.6 Microhenries
L16	Sound Carrier Trap	0Ω		EL-164		TV-112 *	6171 *	
L17	4th. Video IF	.6Ω	.6Ω	EL-161	17-1063			
L18	Fil. Choke	0Ω		EL-474			4604	1.6 Microhenries
L19	5th. Video IF	.8Ω	.8Ω	EL-171				
L20	Fil. Choke	0Ω		EL-474			4604	1.6 Microhenries
L21	Series Peaking Coil	2.9Ω		EL-172		TV-180	6176	20 Microhenries
L22	Shunt Peaking Coil	5Ω		EL-167	19-3125			120 Microhenries
L23	4.5MC Trap	2.2Ω		EL-184	20-1004	TV-151	1470	
L24	Series Peaking Coil	5Ω		EL-167	19-3125			120 Microhenries
L25	Shunt Peaking Coil	7.5Ω		EL-167	19-3125			120 Microhenries
L26	Series Peaking Coil	10Ω		EL-168	19-3180	TV-184	6180	180 Microhenries
L27	Shunt Peaking Coil	7.5Ω		EL-158	19-3250	TV-185	6181	250 Microhenries
L28	1st. Sound IF	3.2Ω		EL-175	17-1031			
L29	2nd. Sound IF	2Ω	2Ω	EL-152		TV-113	6203	
L30	Ratio Det.	5.5Ω	2Ω CT	EL-153	17-3497	TV-115	6205	Tertiary Winding -.8Ω
L31	Horiz. Osc.	125Ω		ET-100B	20-1402	TV-162	6183	Tapped @ 90Ω, wave-form winding -32Ω
L32	RF Choke	2.9Ω		EL-172		TV-180	6176	20 Microhenries

* Enlarge mounting hole.

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA: SHERATON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
L33	.200ADC	53Ω	1.68 Hy.	EL-154-B	C-2326 ①	C-2996 ①	TR-1733 ①	C-23X

① Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: SHERATON PART No. FUSE	SHERATON PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG-P/T (Slo-Blo)	1/4A @ 125V	EF-105		315.250		MDV-1/4	

MISCELLANEOUS

ITEM No.	PART NAME	SHERATON PART No.	NOTES
M2	RF Tuner	EFE-108	
M3	Focus Magnet	EL-150-1	(Includes centering device)
M4	Ion Trap Magnet		
B3 & B4	Trimmer Capacitor	ECM-120	Dual 20-270MMF, Horiz. Lockin, Horiz. Drive.

TROUBLE SHOOTING AIDS (CONT.)

PROPERTY OF
L. F. BLANKENS'
DENVER, COLORADO

AUDIO

WEAK OR NO SOUND

Substitute V10, V11, V12, V13 and V14. Check adjustment of ratio detector and sound IF stages. Check adjustment of A10.

BUZZ

Adjust ratio detector secondary for minimum buzz. If still noticeable, substitute V12 and readjust.

DISTORTED

Check audio amplifier stages V13A, and V14 using audio signal generator and scope;

If Undistorted	If Distorted
Check adjustment of ratio detectory and sound IF stages. Check components of V10 and V11. Check video IF alignment.	Check components of stage where distortion occurs.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution, V18, V19, V20 and V21. Check 1/4 ampere fuse located under the chassis. Check waveform W15;

If Unsatisfactory	If Satisfactory
Check all components of horizontal oscillator and sync guide circuit. Check coupling network between V18 and V19.	Check components of horizontal output tube. Check T3, T5A, T7 and other associated components . Check damper circuit.

INSUFFICIENT HIGH VOLTAGE

Follow procedure outlined uner LOSS OF HIGH VOLTAGE. Substitute V22 and check B plus circuit.

BLOOMING

Follow procedure outlined under INSUFFICIENT HIGH VOLTAGE.

POWER

SET DEAD

Substitute V22. Check T1 and all filter components. Check for shorts in the B plus circuit.

SMALL RASTER, WEAK SOUND

Follow procedure outlined under SET DEAD.

DIM PICTURE

Follow procedure outlined under SET DEAD and check picture tube.

GENERAL

RASTER BUT NO PICTURE OR SOUND

Substitute V2, V3, V5, V6 and V7. Check video IF alignment.

SNOWY PICTURE

Substitute V1 and check components.

SOUND BUT NO PICTURE

Check V7B, V8 and associated components. Check AGC circuit.

INTERMITTENT STREAKS

Check high voltage circuit for corona arcing and discharge.

Symptoms shown above are assumed and are not indicative of the quality and workmanship of this receiving equipment.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the Channel Selector shaft.

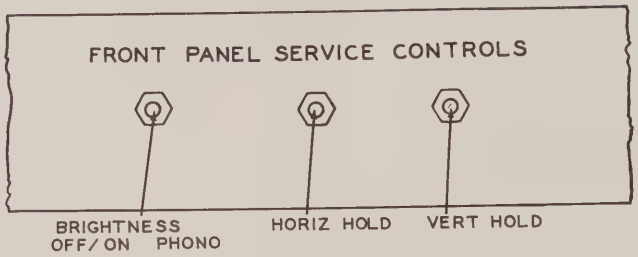
PICTURE TUBE SAFETY GLASS CLEANING

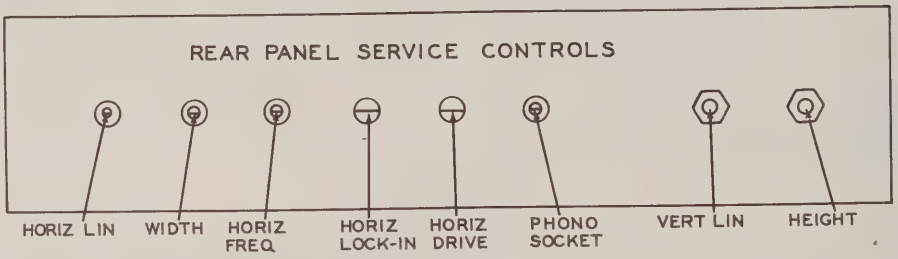
For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions).

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION





HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator circuit can be made from the rear panel of the chassis. Set the Horiz. Hold Control at the mid-position of its range and adjust the Horiz. Freq. Slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector Buzz, adjust the Ratio Detector Secondary L30 located on top of chassis. (See tube placement chart).

FUSES

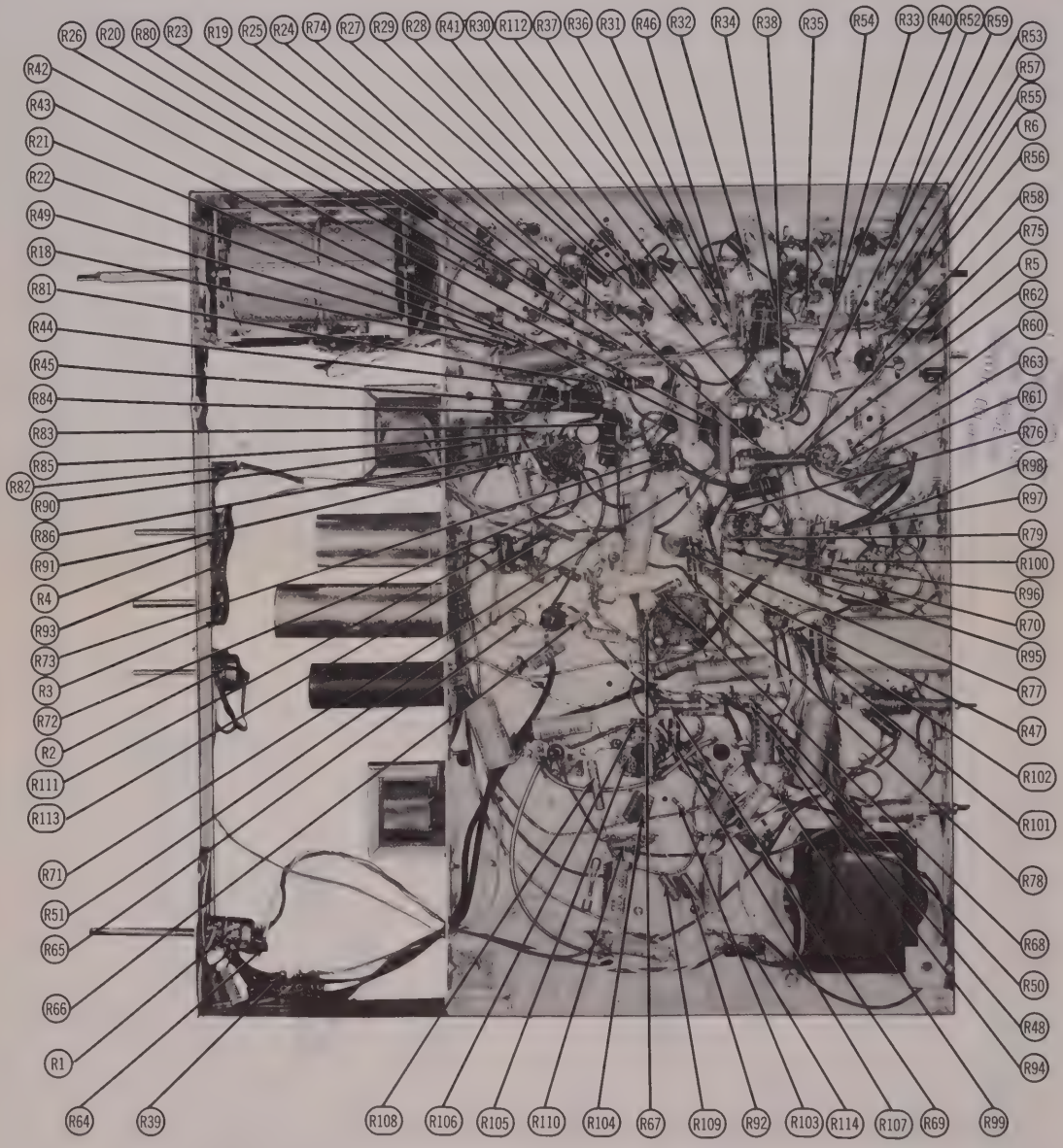
One fuse is used for Horizontal Sweep Circuit protection. (For location , see tube placement chart).

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM Focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 10 wood screws. Remove rear cover.
3. Disconnect built-in antenna. Remove 2 wood screws. Remove antenna bracket.
4. Disconnect speaker plug, yoke plug, CRT socket, HV lead.
5. Remove 1 metal screw. Remove yoke bracket ground.
6. Remove 6 chassis bolt. Remove chassis.
7. Remove 4 speaker nuts. Remove speaker.



CHASSIS BOTTOM VIEW- RESISTOR IDENTIFICATION

SPARTON
MODELS 230, 232, 239 (Ch. 5A10, A)

PROPERTY OF
ANKENSHIP
ST.

SPARTON
MODELS 230, 232, 239 (Ch. 5A10, A)

SPARTON MODEL 232

TRADE NAME	Sparton Models 230, 232, 239 (Ch. 5A10-A)
MANUFACTURER	Sparks-Withington Co,, Jackson, Michigan.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp.,12AV6 Det-AVC-AF Amp., 50L6GT Audio Output , 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .25 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1610KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	456KC (400~Mod	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1610KC	"	"	A5	Adjust for maximum output. If isolation transmormer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. Trimmer at opposite end of oscillator stator plates should not be adjusted unless range of A5 is inadequate.

Repeat alignment for optimum results.

Replace chassis in cabinet with tuning gang fully open and set pointer to last reference mark at high frequency end of dial.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	50L6GT	50L6GT	7S	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	PA4310	PRS-150/50-50		BRD5515A		TCD49	TVA-2453	Yellow
B	40	150								Red
C2	.05	400	PC40GL-503	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3	150	500	MC60G-151	1468-00015	D6-151	5W5T15	GP2K-151	MC236	1FM-315	
C4	.05	200	PC40GK-503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C5	3600	500	MC61F-362							
C6A	100		♦PA4329-1	SI-100	♦PC-50	TM5T1	♦1403-01	GP1K-101	♦100C1	
B	100			SI-100		TM5T1		GP1K-101		
C7	10000		PA4334-2	BPD-01	DD-103	TM5S1	811-01	DC-511	5HK-S1	
C8	2000	500	PC45GK-202	1467-002	D6-202	1W5D2	GP2-333-202	MC457	1FM-22	
C9	.01	400	PC40GK-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C10	.006	400	PC40HL-602	P688-006		PTE6D6	GP2-333-602	PT626	6TM-D6	
C11	.05	400	PC40HL-503	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C12	.1	400	PC40FL-104	P488-1		PTE4P1		PT401	4TM-P1	

♦ Items C6A, C6B, R7 are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	PA4400-11	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R2	22KΩ	½	BR12S-223	BTS-22K	
R3	1 Meg	½	BR12N-105	BTS-1 Meg	
R4	68Ω	½	BR12S-680	BTS-68	
R5	470Ω	½	BR12S-471	BTS-470	
R6	2.2Meg	½	BR12N-225	BTS-2.2Meg	
R7	47KΩ	½	♦PA4329-1	BTS-47K	

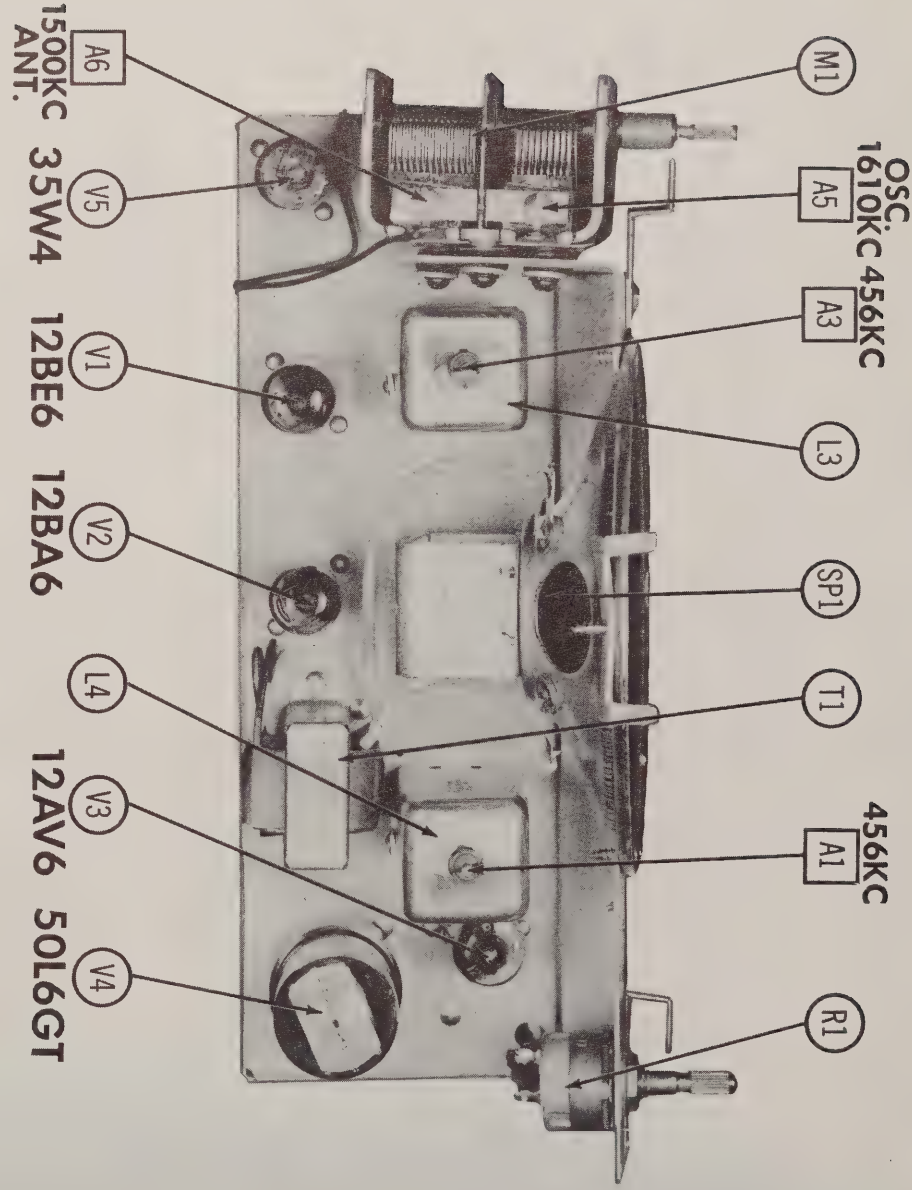
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R8	10Meg	½	BR12N-106	BTS-10Meg	
R9	220KΩ	½	BR12S-224	BTS-220K	
R10	470KΩ	½	BR12N-474	BTS-470K	
R11	150Ω	½	BR12S-151	BTS-150	
R12	1200Ω	1	CR12S-122	BTA-1200	
R13	68Ω	1	CR12S-680		

♦ Items R7 and C6A, C6B are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2.1KΩ	3.3Ω	160Ω Tap ② 5.7Ω	.56Ω	AB-44065-1	A-3330	S-3031 ①	RO-3 ①		① Drill one new mtg. hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	SPARTON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.3Ω	PC-63000-25J	ST-105 P5-X	5A07	

COILS (RF-IF)

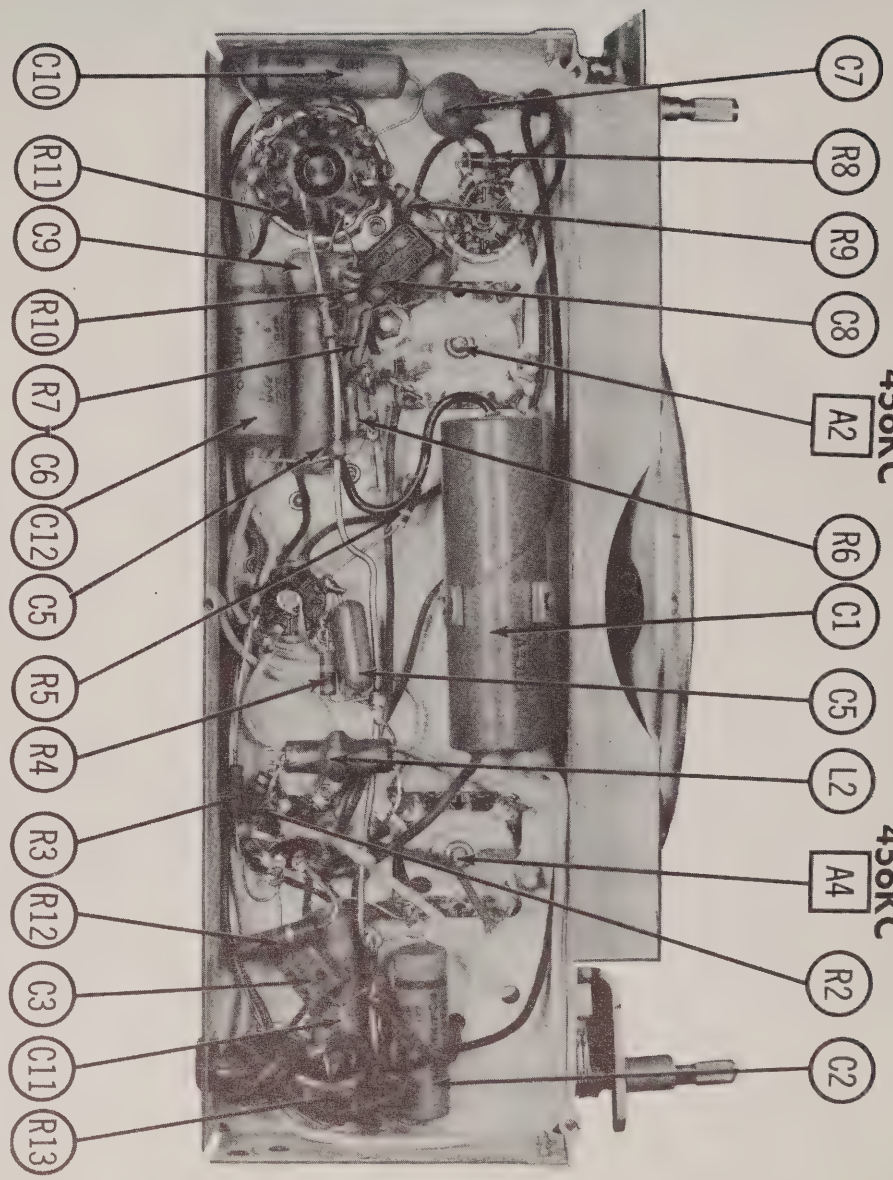
ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	SPARTON PART No.	MILLER PART No.	MEISSNER PART No.	
L1	Loop Ant.	.2Ω	1.6Ω	AB43062-2			Includes cabinet back
L2	Osc. Coil	.6Ω	5Ω	AA6797-1		14-1073	
L3	Input IF	11.5Ω	11.5Ω	AA6668-3	1312-C1*	16-6666*	
L4	Output IF	10.5Ω	10.5Ω	AA6668-4	1312-C4*	16-6667*	

* Drill mounting holes.

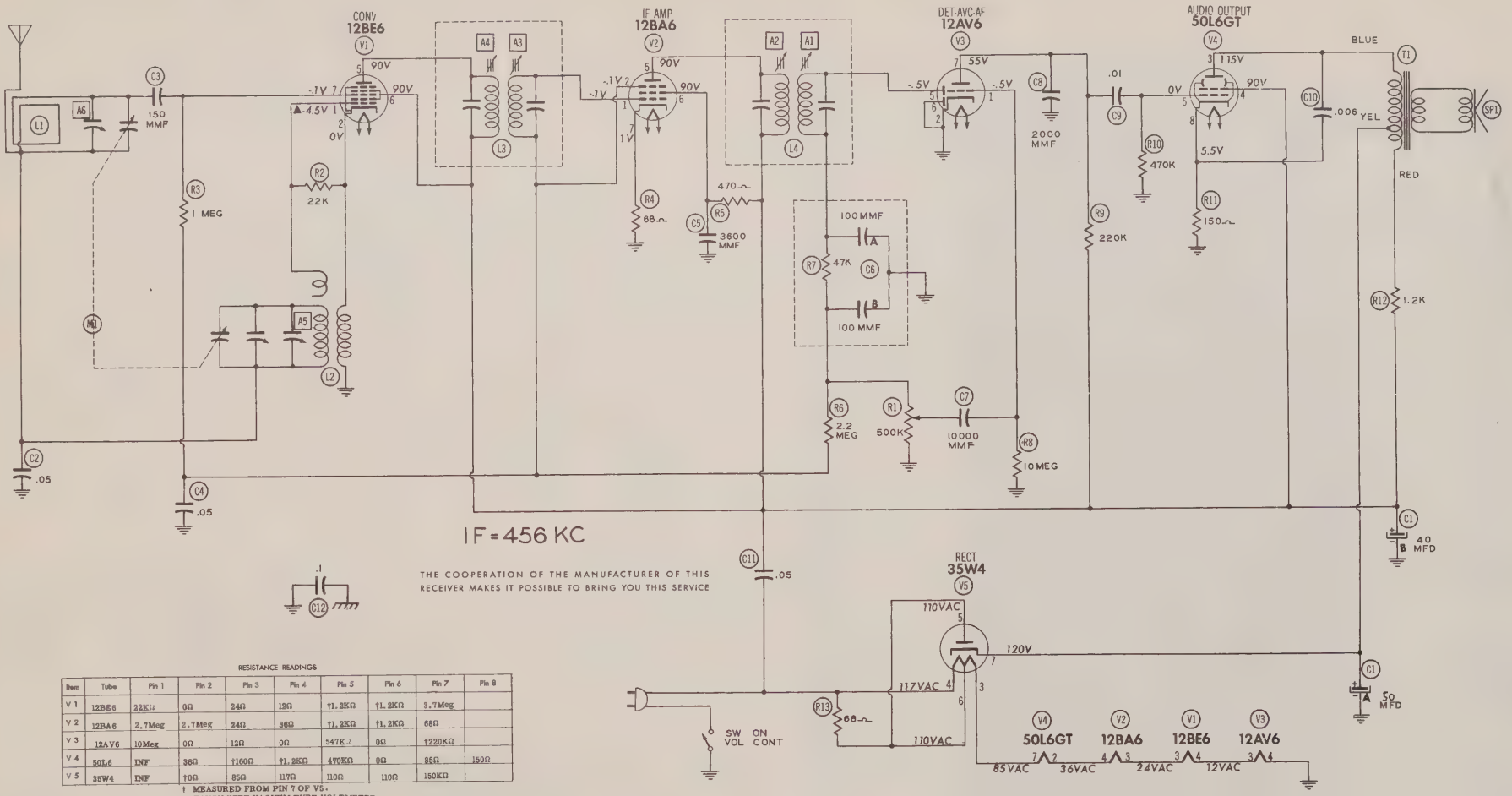
MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
M1.	Tuning Capacitor	PB40414	33-455MMF, 40-206MMF
	Cabinet	PD90089-1	Black, Model 230
	Cabinet	PD90089-2	Maroon, Model 232
	Cabinet	PD90089-3	Ivory, Model 239
	Knob	PA5656-1	Black , Model 230
	Knob	PA5656-2	Maroon, Model 232
	Knob	PA5656-3	Ivory, Model 239
	Dial Pointer	PA5410-1	

CHASSIS—BOTTOM VIEW



SPARTON MODEL 230 (Ch. 5A10-A)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	22KΩ	0Ω	24Ω	12Ω	†1.2KΩ	†1.2KΩ	3.7Meg	
V 2	12BA6	2.7Meg	2.7Meg	24Ω	36Ω	†1.2KΩ	†1.2KΩ	68Ω	
V 3	12AV6	10Meg	0Ω	12Ω	0Ω	547KΩ	0Ω	†220KΩ	
V 4	50L6	INF	36Ω	†160Ω	†1.2KΩ	470KΩ	0Ω	85Ω	150Ω
V 5	35W4	INF	†0Ω	85Ω	117Ω	110Ω	110Ω	150KΩ	

† MEASURED FROM PIN 7 OF V5.
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

210-10

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

STEELMAN MODEL 3RP1

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

STEELMAN
MODEL 3RP1

STEELMAN
MODEL 3RP1

TRADE NAME	Steelman Model 3RP1
MANUFACTURER	Steelman Phono & Radio Co., Inc., 12-30 Anderson Ave., Mt. Vernon, N.Y.
TYPE SET	AC Operated AM-Phono Combination Superheterodyne Receiver with 3 Speed Manual Record Player
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

Replace receiver in cabinet, turn tuning gang fully open and set the numeral "1" in "160" approximately 3/16" to the right of marker screw in cabinet.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

STEELMAN MODEL 3RP1

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STEELMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifer	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEELMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	501	150		PRS150/50-30		EDL5315		2N520	TVA-2450	Red Blue
B	30	150								
C2	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C4	200	500		1468-0002	D6-201	5W5T2	GP2K-201	MC237	1FM-32	
C5A	220									
B	.002									
C	.005			♦PC-150		♦1408-01			♦103C4	
D	250									
E										
C6	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C7	180			SI180	D6-181		GP2K-181	UC-5318	5GA-T18	
C8	.1	400		P488-1		PTE4P1		PT401	4TM-P1	
C9	.1	400		P488-1		PTE4P1		PT401	4TM-P1	

♦ Items C5A, C5B, C5C, C5D, C5E, R6A, R6B, R6C are combined in one unit.
When replacing items separately, C5D and C5E should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEELMAN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	VC-51	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

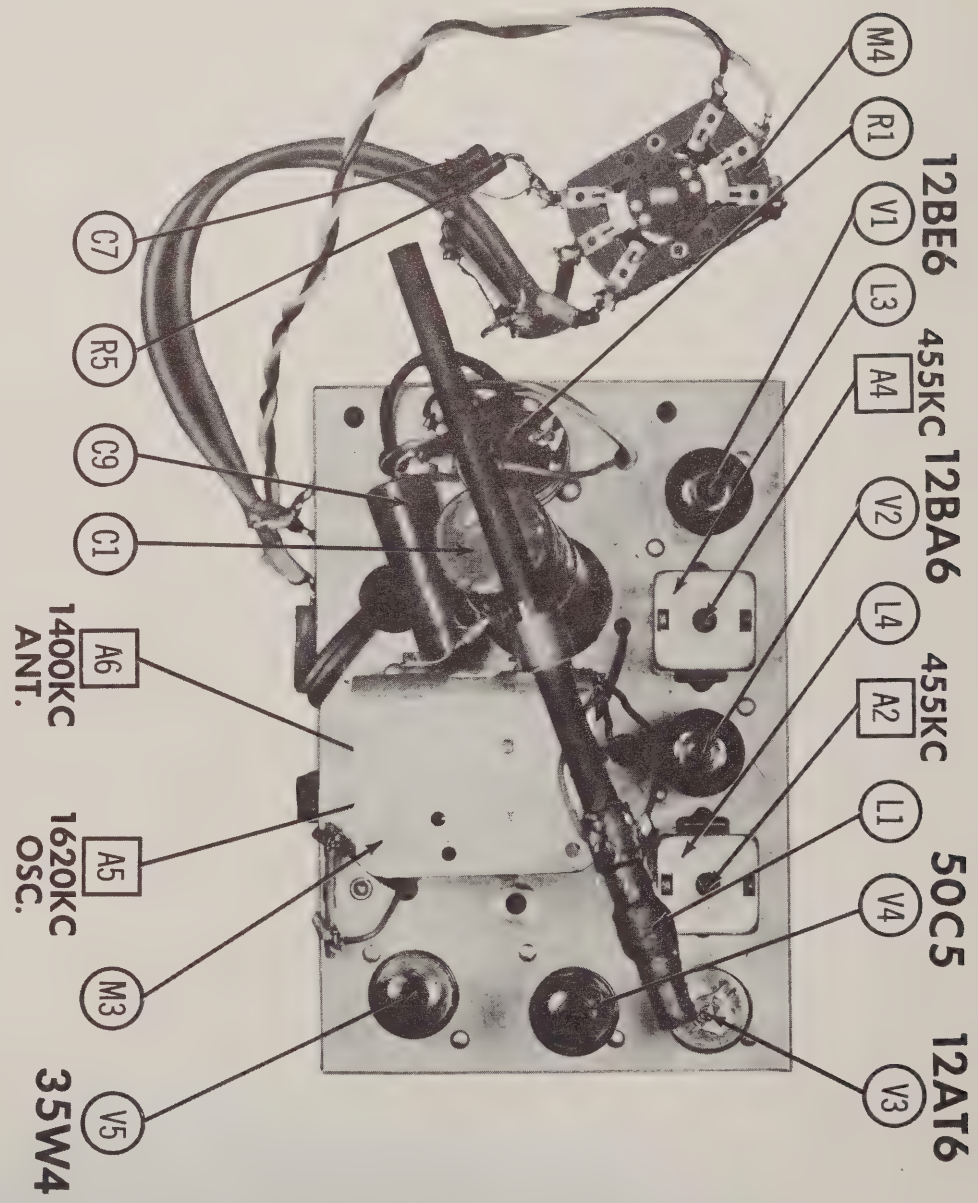
RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: STEELMAN PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	10KΩ	½		BTS-10K	
R3	150Ω	½		BTS-150	
R4	2.2Meg	½		BTS-2.2Meg	
R5	1 Meg	½		BTS-1 Meg	
R6A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	♦	BTS-470K	
C	470KΩ	½		BTS-470K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: STEELMAN PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R7	150Ω	1		BTA-150	
R8	18Ω	½			
R9	2200Ω	1		BTA-2200	

♦ Items R6A, R6B, R6C, C5A, C5B, C5C, C5D, C5E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		STEELMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.26KΩ	2.8Ω	148Ω	.4Ω		A-3332 ①	A-3025 ①	RO-2 ①	S-1X ①	①Bend mtg. tabs down, file out slots, mount on original mtg. bracket.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	STEELMAN PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	2.8Ω		ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	STEELMAN PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	1Ω					70-Osc.*	
L2	Osc. Coil	.6Ω	3.6Ω		14-1074		12-C1	
L3	Input IF	20Ω	20Ω	LF-50	16-6758	BC-352	12-C2	
L4	Output IF	20Ω	20Ω	LF-50	16-6758	BC-353		

* Disregard tap on secondary winding.

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA						REMARKS
	STEELMAN PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LQD-1J * W-LD	"Q" & Q-33	*90ID		96-0 *2693-0	0-1 and 0-3	* Complete arm and Cart. Assy.

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

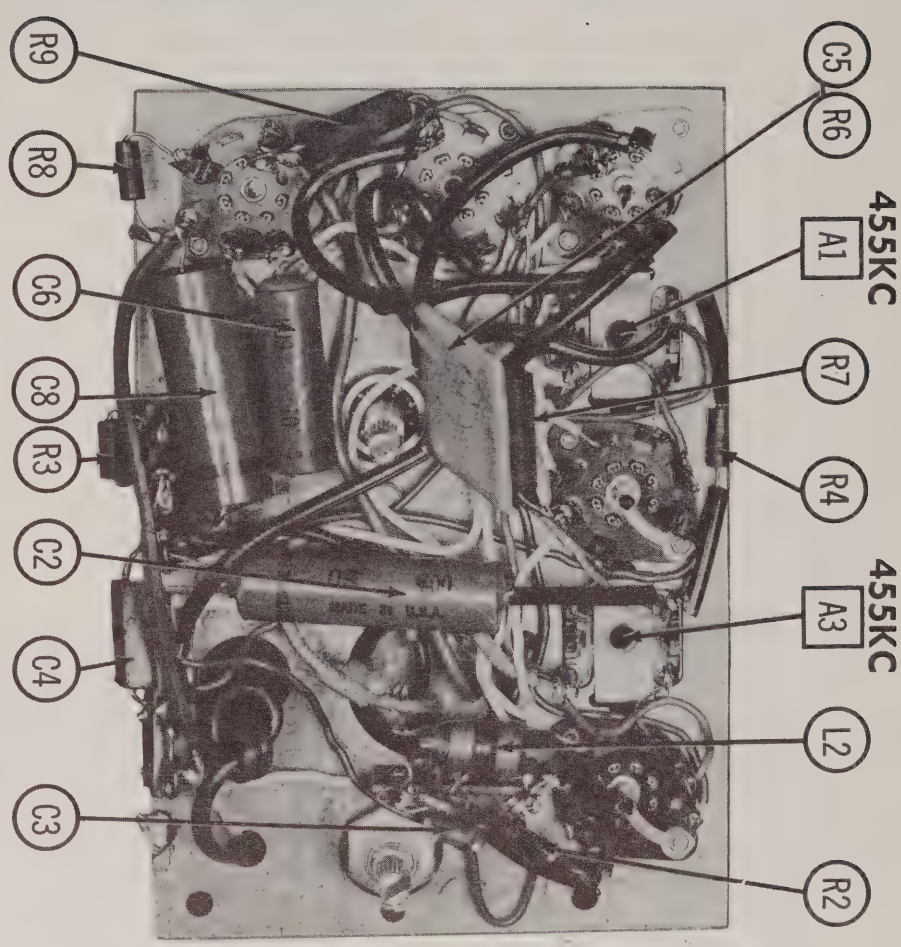
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	STEELMAN PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-2A or S-2S & W-2MGA or W2MGS	A-80 or A-81 & A-80LP or A-81LP	

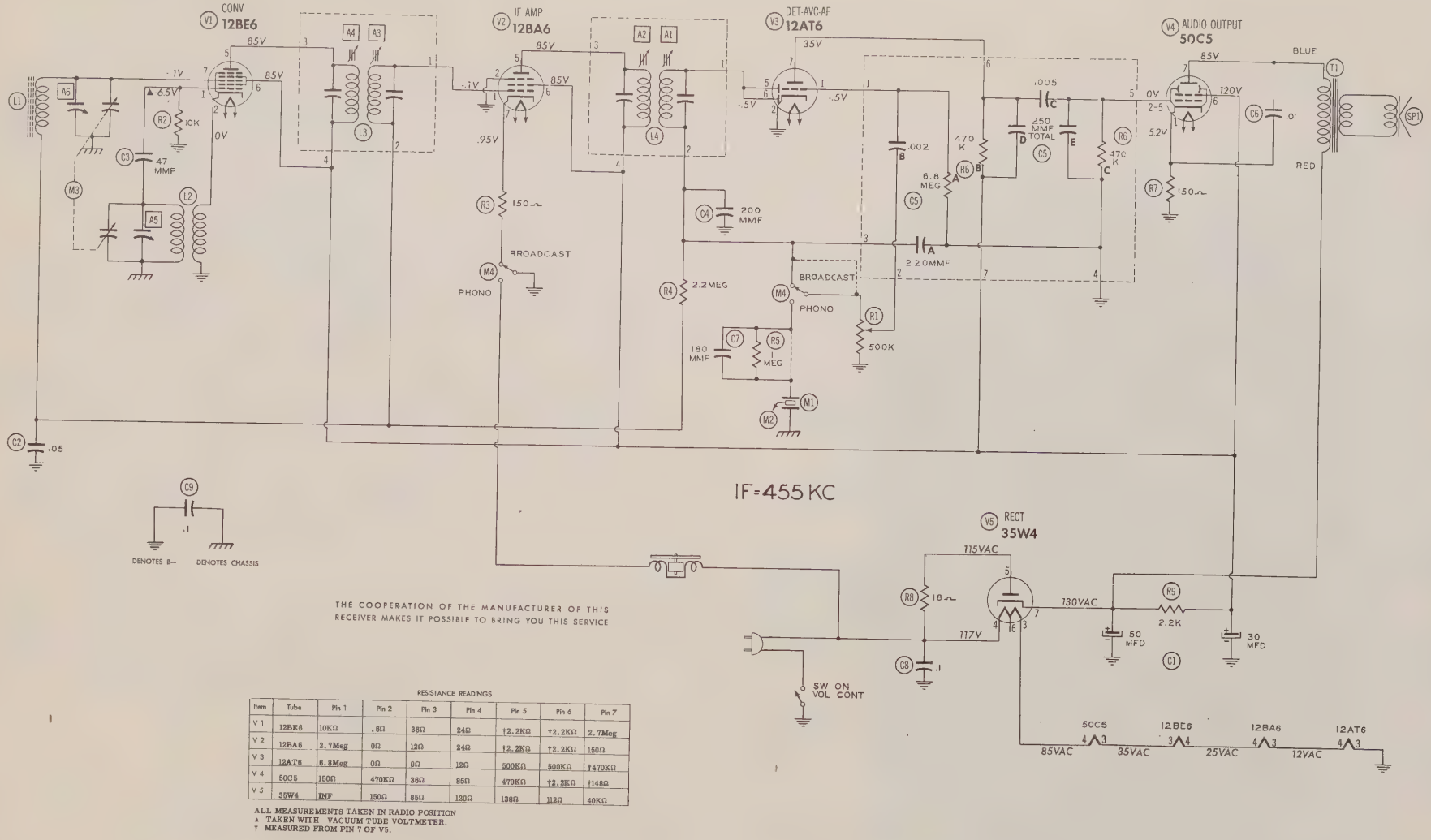
MISCELLANEOUS

ITEM No.	PART NAME	STEELMAN PART No.	NOTES
M3	Tuning Capacitor	CV-28	29-457MMF, 32-190MMF
M4	Switch		Radio-Phono Selector

CHASSIS—BOTTOM VIEW



STEELMAN MODEL 3RP1



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	10KΩ	.6Ω	36Ω	24Ω	†2.2KΩ	†2.2KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	12Ω	24Ω	†2.2KΩ	†2.2KΩ	150Ω
V 3	12AT6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†2.2KΩ	†148Ω
V 5	35W4	INF	150Ω	85Ω	120Ω	138Ω	112Ω	40KΩ

ALL MEASUREMENTS TAKEN IN RADIO POSITION
▲ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

210-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

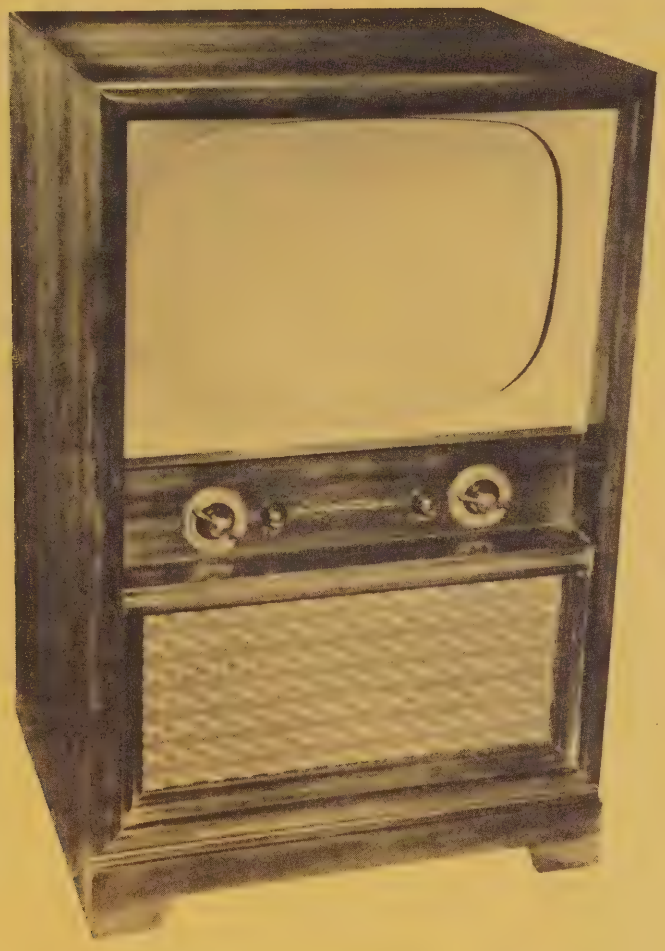
SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

DENV



MODEL 5382B

SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

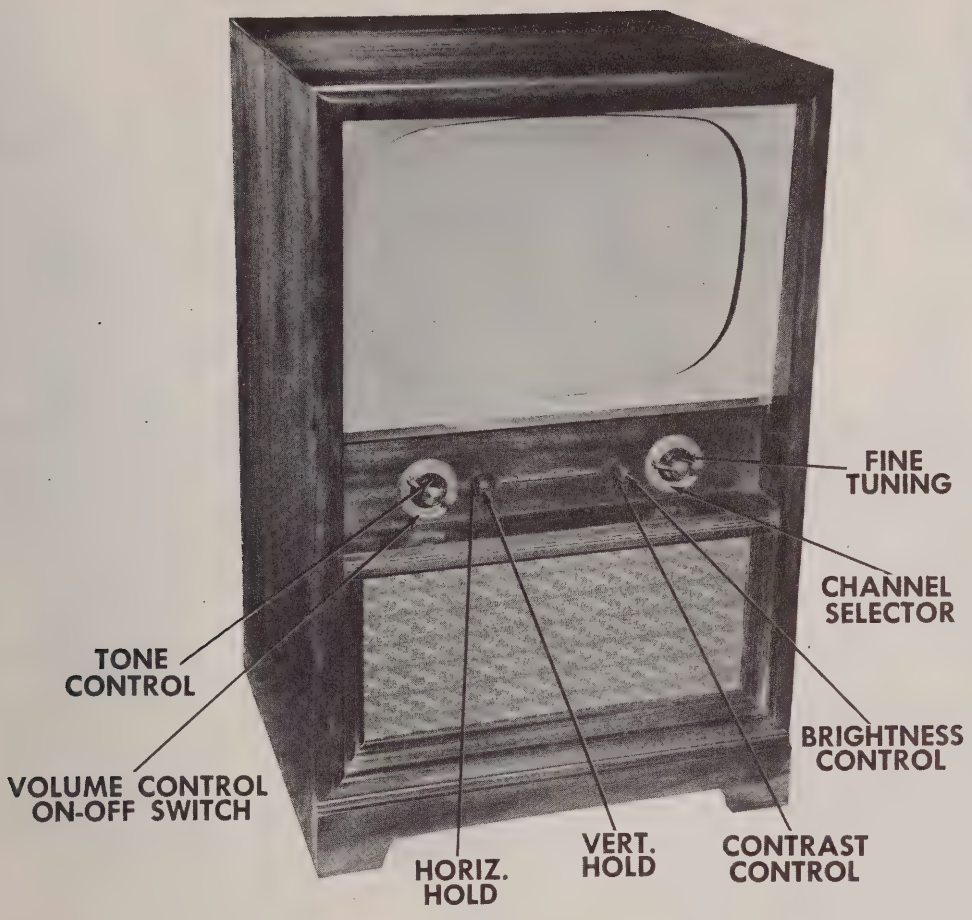
DATE 7-53 SET 210 FOLDER 11

PHOTOFACT* Folder

*TRADE MARK

SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

L. F. [illegible] CITY OF [illegible] TOWNSHIP
3824 [illegible] ST.
DENVER, COLORADO



SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

SPARTON MODEL 5382B

TRADE NAME	Sparton Models 5342A, 5343A, 5382A (Ch. 27D213), 5382B (Ch. 27D213-A), 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213)
MANUFACTURER	Sparks-Withington Co., Jackson, Michigan
TYPE SET	Television Receiver
TUBES	Twenty-seven
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.18 Amp. @ 117 Volts AC
TUNING RANGE	Channel 2 thru 13, Video IF 26.25MC, Sound IF 21.75MC (Intercarrier)

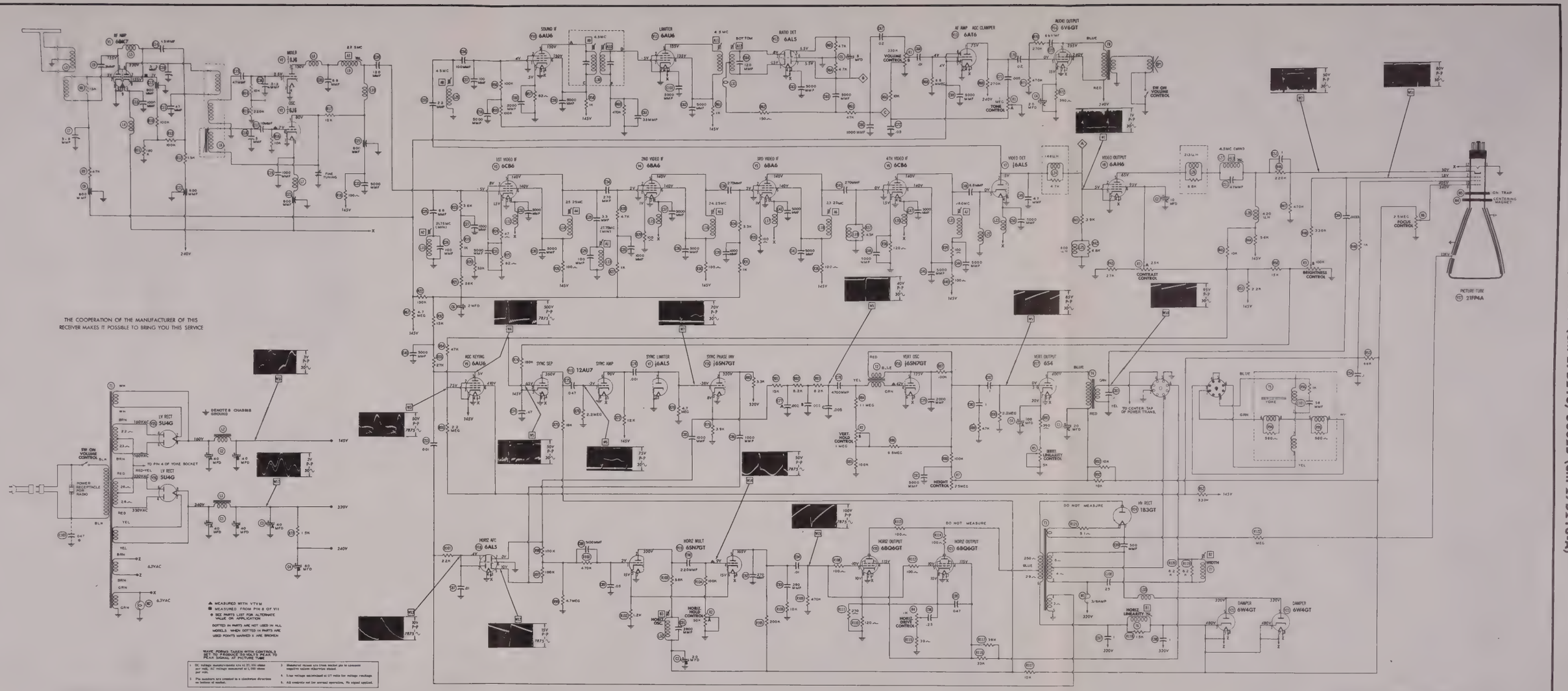
INDEX

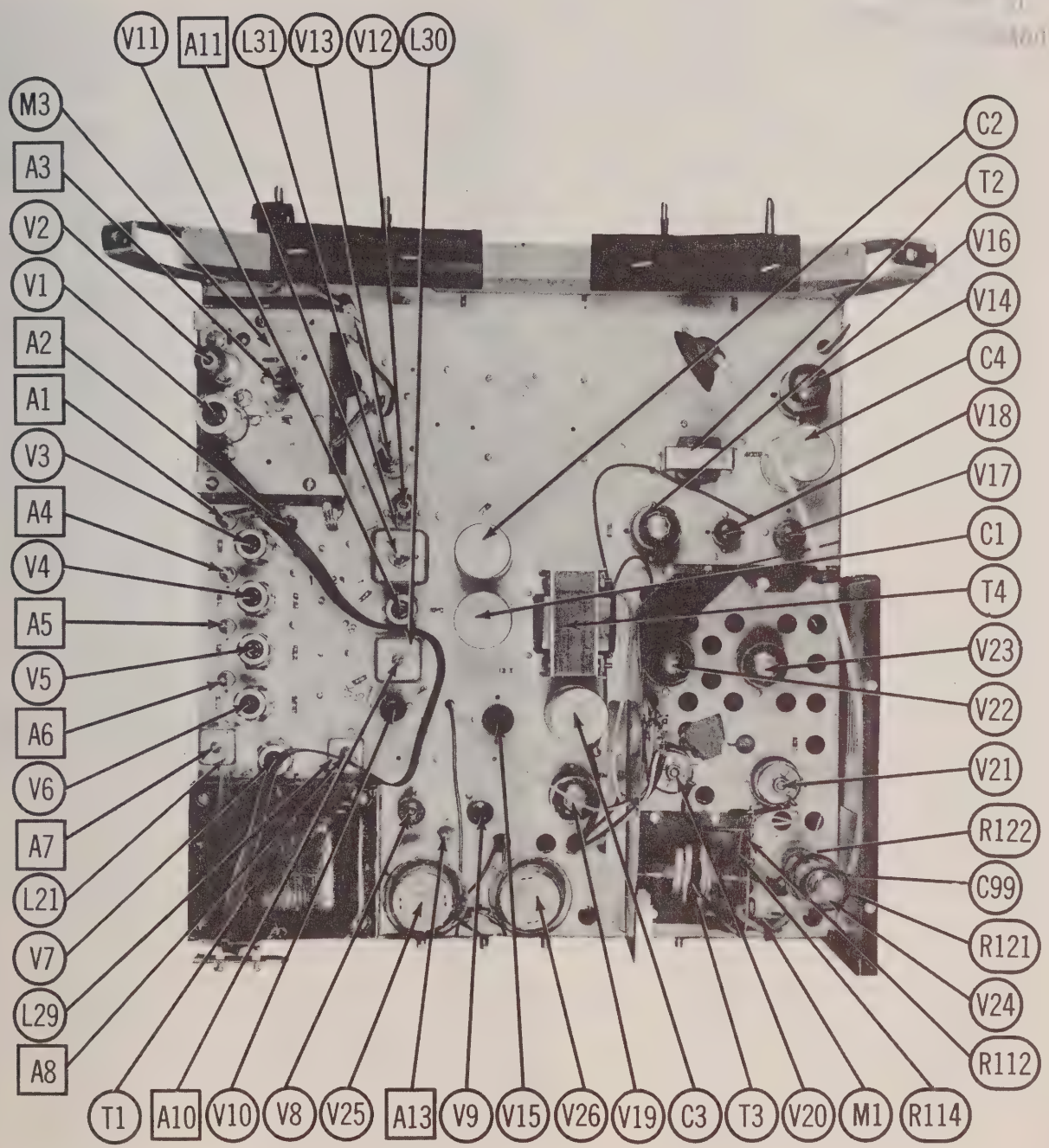
Alignment Instructions 6
Disassembly Instructions 19
Horizontal Sweep Circuit Adjustments 13
Parts List and Descriptions 14, 15, 16
Photographs
Cabinet-Rear View 13
Capacitor Identification 4, 9
Chassis-Top View 3
RF Tuner 7
Resistor Identification 11, 18
Photographs (Cont)
Trans., Inductor and Alignment Identification 10
Resistance Measurements 8
Servicing in the Field 19
Schematic 2
Trouble Shooting Aids 12, 17
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

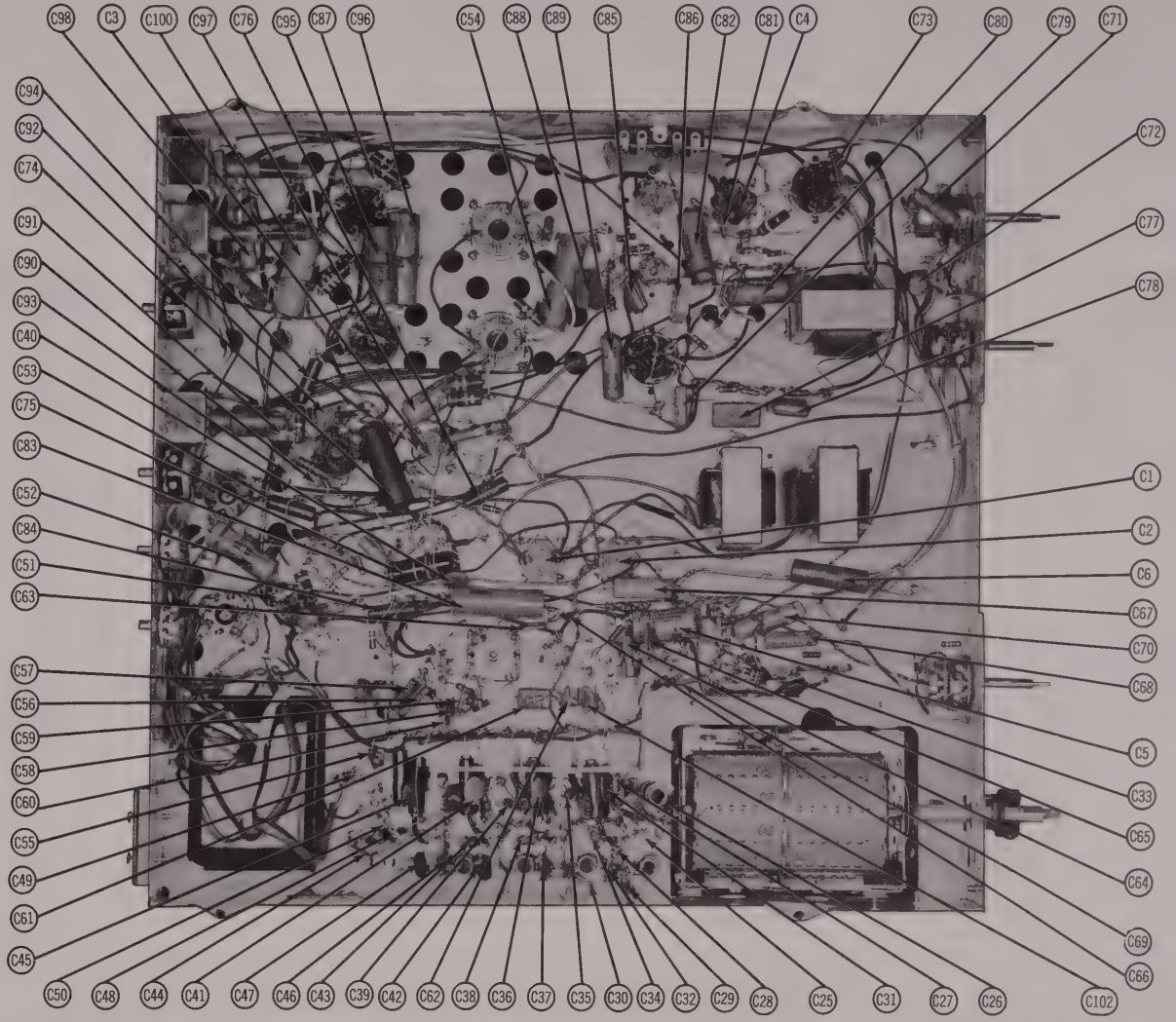
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7-53 SET 210 FOLDER 11


SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953
SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

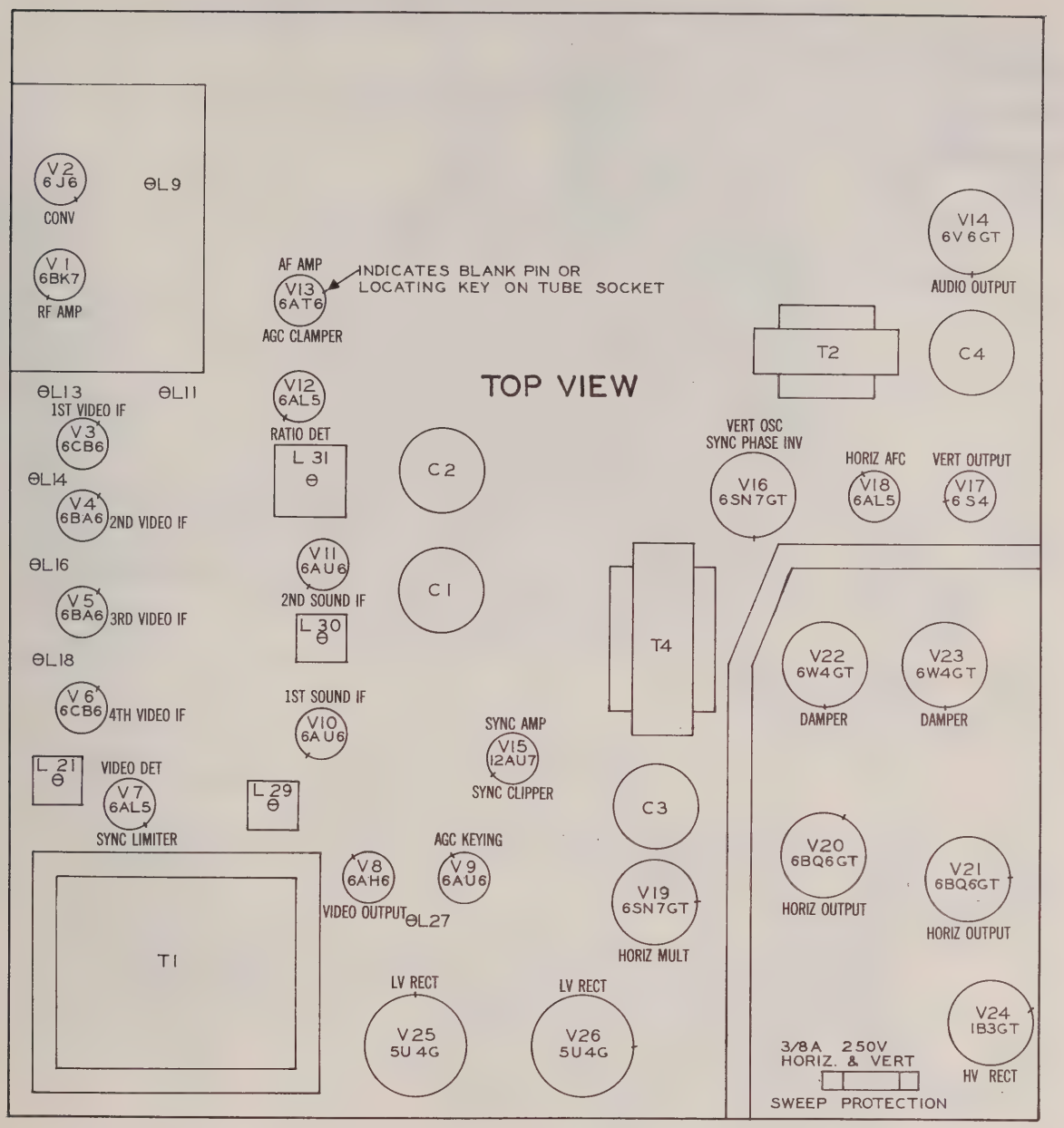


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V25, V26

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V8, V27
Has pic, no sound - V10, V11, V12, V13, V14
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V16
No horiz. sync - V16, V18, V19
No vert. or horiz. sync - V7, V15, V16

SWEEP FAILURE
No raster, has sound - V19, V20, V21, V22, V23, V24, V27 Fuse (M1)
No vertical deflection - V16, V17
Poor vert. linearity or foldover - V16, V17
Poor horiz. linearity or foldover - V19, V20, V21, V22, V23
Narrow picture - V19, V20, V21, V22, V23, V24, V25, V26
Vert. off freq. - V16
Horiz. off freq. - V16, V18, V19

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis.
Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Remove the 6AU6, V9, from its socket. Connect the negative lead of a 4.5 volt battery to the ungrounded side of C40. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	27.75MC (Unmod)	Any	DC probe to point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	21.75MC	"	"	A2	"
3.	"	"	22.5MC	"	"	A3	Adjust for maximum deflection.
4.	"	"	25.25MC	"	"	A4	"
5.	"	"	24.25MC	"	"	A5	"
6.	"	"	23.25MC	"	"	A6	"
7.	"	"	26.0MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	22.7MC 25.5MC 26.25MC	Any	Vert. Amp. thru 47KΩ to point (A). Low side to chassis.		Check for response similar to Fig. 1. If necessary retouch A3 thru A7 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to point (C). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A8, A9, A10, A11	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
10.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A12	Reconnect capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector (Fig.4) to pin 11 of picture tube. Common to chassis.	A13	Adjust for MINIMUM deflection.

THE TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

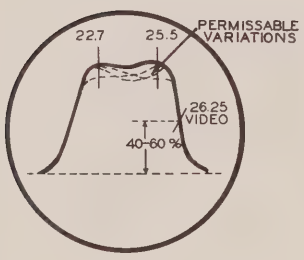


FIG.1

FIG. 2

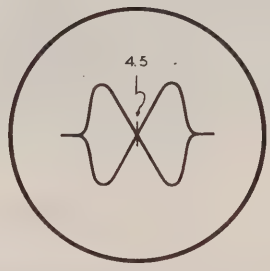


FIG. 3

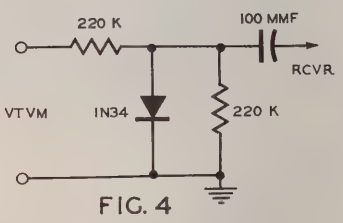
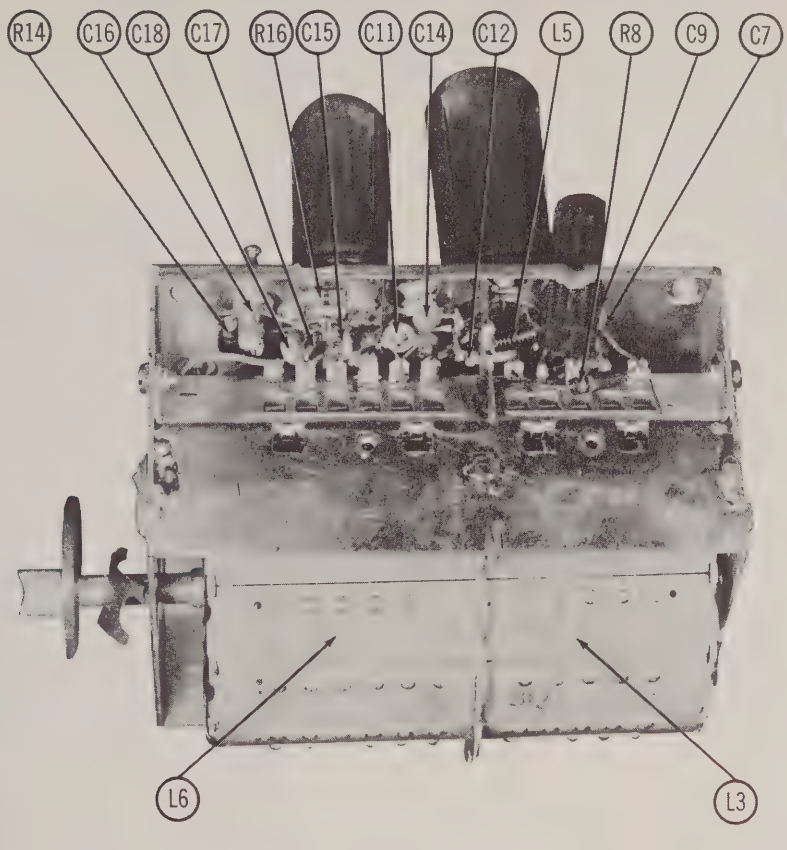
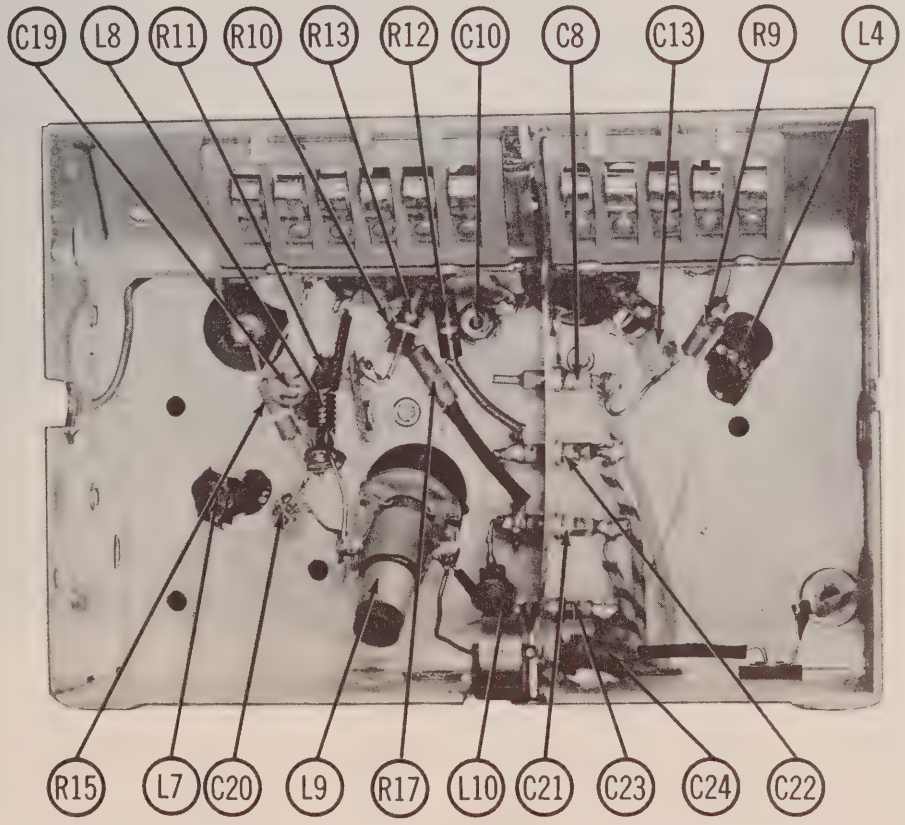


FIG. 4



RF TUNER-RIGHT SIDE

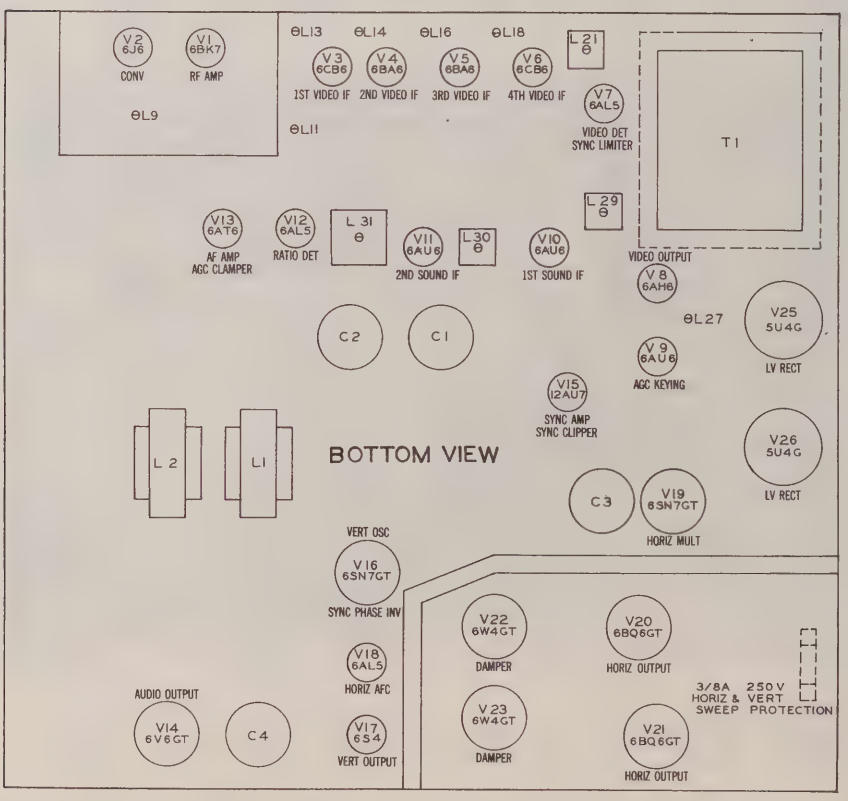


RF TUNER-BOTTOM VIEW

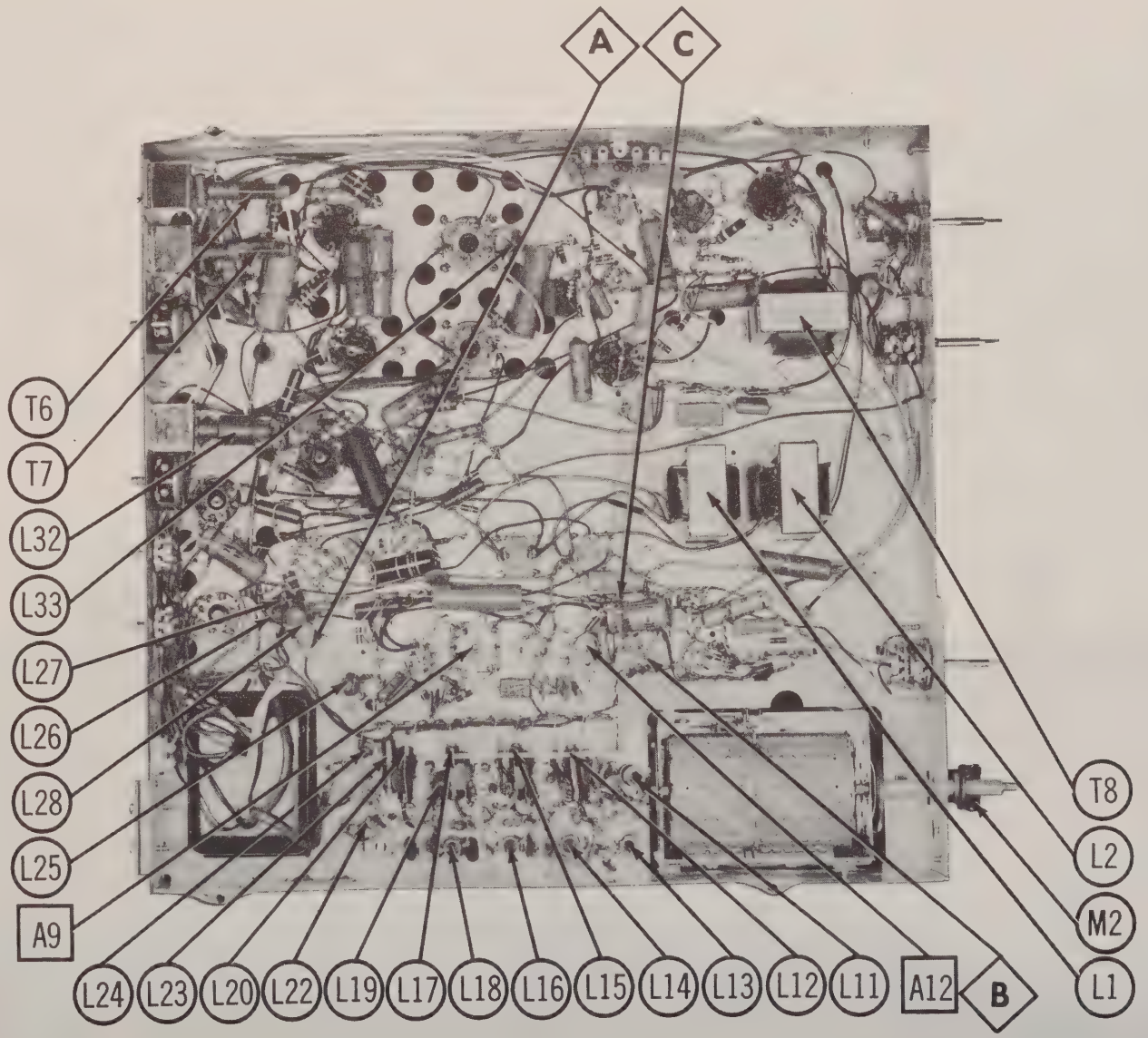
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	285KΩ	0Ω	.1Ω	0Ω	†3KΩ	†175KΩ	INF	0Ω
V 2	6J6	#15.2KΩ	#210Ω	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	38KΩ	129Ω	0Ω	.1Ω	#208Ω	#208Ω	82Ω		
V 4	6BA6	95KΩ	0Ω	0Ω	.1Ω	#208Ω	#208Ω	100Ω		
V 5	6BA6	93KΩ	0Ω	0Ω	.1Ω	#208Ω	#208Ω	100Ω		
V 6	6CB6	2.9Ω	120Ω	0Ω	.1Ω	#308Ω	#208Ω	0Ω		
V 7	6AL5	0Ω	3.9KΩ	0Ω	.1Ω	2.9Ω	0Ω	4.7Meg		
V 8	6AH6	3.9KΩ	0Ω	0Ω	.1Ω	#5.6KΩ	#8.2KΩ	0Ω		
V 9	6AU6	85KΩ	108Ω	0Ω	.1Ω	130KΩ	▲68KΩ	#0Ω		
V 10	6AU6	670KΩ	0Ω	.1Ω	.0Ω	#1.1KΩ	#1.1KΩ	82Ω		
V 11	6AU6	470KΩ	0Ω	0Ω	.1Ω	#1.1KΩ	#1.1KΩ	0Ω		
V 12	6AL5	INF	INF	0Ω	.1Ω	4.7KΩ	0Ω	4.7KΩ		
V 13	6AT6	6.8Meg	0Ω	0Ω	.1Ω	240KΩ	240KΩ	†270KΩ		
V 14	6V6GT	INF	.1Ω	†2KΩ	†1.7KΩ	470KΩ	740KΩ	0Ω	390Ω	
V 15	12AU7	▲28KΩ	#15.5KΩ	#190KΩ	.1Ω	.1Ω	#12KΩ	2.2Meg	0Ω	0Ω
V 16	6SN7GT	4.7Meg	†3.4KΩ	3.9KΩ	1.3Meg	▲1.1Meg	0Ω	0Ω	.1Ω	
V 17	6S4	INF	1.1KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	INF	INF	▲5.7KΩ
V 18	6AL5	22KΩ	22KΩ	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 19	6SN7GT	5.1Meg	▲15.6KΩ	1.2KΩ	110KΩ	▲210KΩ	1.2KΩ	0Ω	.1Ω	
V 20	6BQ6GT	INF	0Ω	INF	†18KΩ	470KΩ	INF	.1Ω	85Ω	Top Cap ▲135Ω
V 21	6BQ6GT	INF	0Ω	INF	†18KΩ	470KΩ	470KΩ	.1Ω	85Ω	Top Cap ▲135Ω
V 22	6W4GT	INF	INF	300KΩ	†113Ω	†113Ω	INF	▲0Ω	▲.1Ω	
V 23	6W4GT	INF	INF	300KΩ	†113Ω	†113Ω	INF	▲0Ω	▲.1Ω	
V 24	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ▲285Ω
V 25	5U4G	0Ω	22KΩ	INF	22.5Ω	INF	22.7Ω	INF	22KΩ	
V 26	5U4G	INF	200KΩ	3Ω	28Ω	470KΩ	26.4Ω	INF	200KΩ	
V 27	21FP4A	0Ω	380KΩ	Pin 6 ▲550KΩ	Pin 10 ▲69KΩ	Pin 11 470KΩ	Pin 12 .1Ω			

MEASURED FROM PIN 8 OF V25.
† MEASURED FROM PIN 8 OF V26.
▲ MEASURED FROM PIN 3 OF V22.

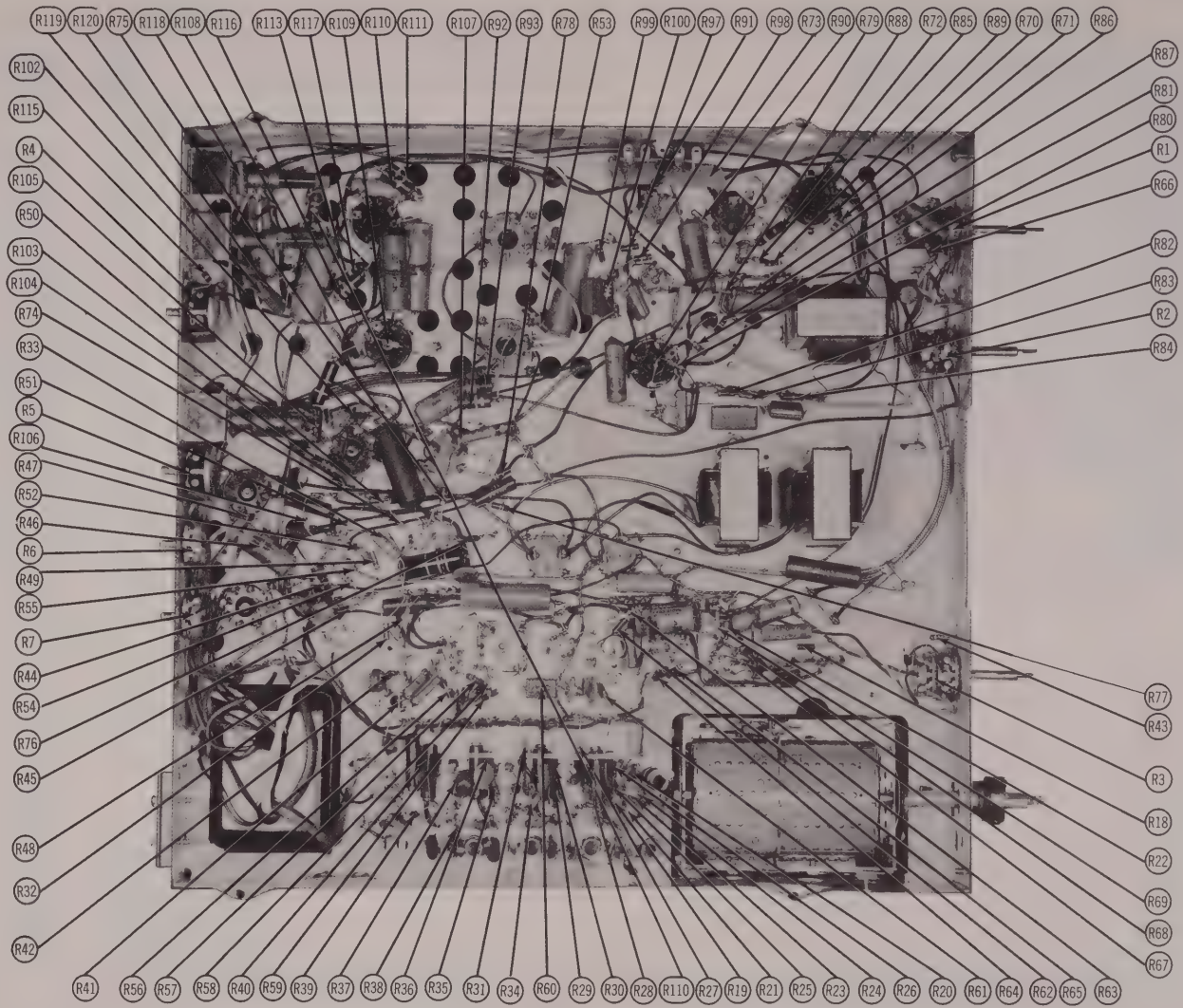


TUBE PLACEMENT CHART



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
L. F. [illegible] SHIP
[illegible] ST.
[illegible] COLORADO



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Check yoke for open. Check R119, R120, T7 and C100 for change of value or open.

INSUFFICIENT SWEEP

Substitute V19, V20, V21, V22, V23 and V26. Check waveform at W14.

If Satisfactory	If Unsatisfactory
Check C95, C97, C98, T3, R118 and other components associated with the horizontal output and damper stages.	Check C90, C92, C93, C94, C96 and other components associated with horizontal oscillator stage.

DRIVE LINES

Substitute V19, V20, V21, V22 and V23. Check C93, C96, R115 and R4. Check C97, C98 and other components associated with the horizontal output and damper stages.

COMPRESSED LEFT SIDE

Substitute V20, V21, V22 and V23. Check C96, R115, R4, R110, R111, T3 and other associated components with V20 and V21.

FOLDS

Substitute V20, V21, V22 and V23. Check T3, C97, C98, C100 and other components associated with horizontal output and damper stages.

XMAS TREE EFFECT

Substitute V19. Check C91, L32 and R103 for change of value or open.

VERTICAL

LOSS OF SWEEP

Substitute V16 and V17. Check T2, T4, C82 and other components associated with V16A and V17. Check yoke.

INSUFFICIENT SWEEP

Substitute V16 and V17. Check C36 and C4A. Check T2 and T4. Check C82, C80, C83 and other components associated with V17. Check yoke.

COMPRESSED AT BOTTOM

Substitute V17 and V16. Check C4A, C3C, C80, C82, T4 and yoke.

COMPRESSED AT TOP

Substitute V17. Check C3C and T4.

FOLDS

Substitute V16 and V17. Check T4, yoke and other components associated with V16 and V17.

SYNC

HORIZONTAL

LOSS OF SYNC

Substitute V18 and V19. Check C85, C86 and C87. Check other components associated with V18 and V19.

CRITICAL SYNC

Substitute V18 and V19. Check C88, C89, C85, C86 and C87. Check other associated components.

PULLING PICTURE

Substitute V18 and V19. Check C88 and C89 .

VERTICAL

LOSS OF SYNC

Substitute V16 . Check C78 and integrator network. Check T2 and other components associated with V16A.

CRITICAL SYNC

Substitute V16. Check integrator network and C78.

TRIGGERING

Substitute V16 and V15. Check circuits near these stages for heater lead dress.

VIDEO

SOUND BARS

Check adjustment of local oscillator . Check adjustment of 4.5MC trap, A13. Check sound take off adjustment, A7.

POOR RESOLUTION

Substitute V1, V3, V4, V5, V6 and V7. Check components of video IF strip . Check video IF alignment.

POOR CONTRAST

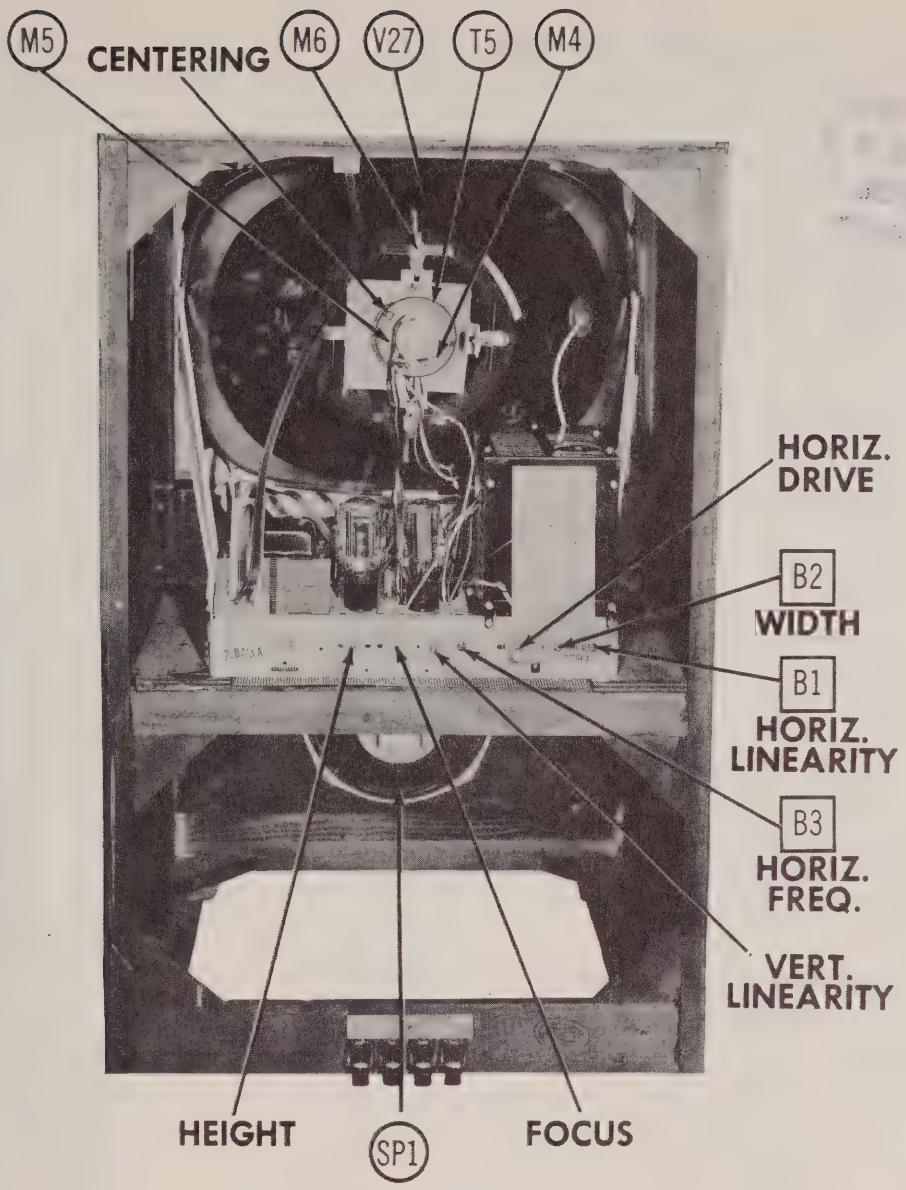
Substitute V7 and V8. Check C2C, R43 and R3. Check C52. Check picture tube.

SMEAR

Substitute V7 and V8. Check L24, L25 and L26 for open. Check R44, R46 and R47 for change of value. Check picture tube.

ONE BLACK BAR ACROSS PICTURE

Check RF tuner, Video IF, Video detector and Video IF stages for heater to cathode leakage. Check picture tube for heater to cathode leakage.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal linearity slug (B1) for a picture that is symmetrical from left to right.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Set the horizontal hold control fully counter clockwise. Adjust the horizontal drive control clockwise as far as possible without the presence of vertical white lines or compression of the center of the picture.

Set the horizontal hold control at mid-position and adjust the horizontal oscillator slug (B3) for synchronization with approximately zero volts as measured with VTVM from pin 1 of V19 to chassis.

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BK7	6BK7	9AJ	
V2	Converter	6J6	6J6	TBF	
V3	1st. Video IF Amp.	6CB6	6CB6	TCM	
V4	2nd. Video IF Amp.	6BA6	6BA6	TBK	
V5	3rd. Video IF Amp.	6BA6	6BA6	TBK	
V6	4th. Video IF Amp.	6CB6	6CB6	TCM	
V7	Video Detector-Sync Limiter	6AL5	6AL5	6BT	
V8	Video Output	6AH6	6AH6	TBK	
V9	AGC Keying	6AU6	6AU6	TBK	
V10	Sound IF Amp. np.	6AU6	6AU6	TBK	
V11	Limiter IF Amp.	6AU6	6AU6	TBK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier-AGC Clamper	6A7S	6A7S	TBT	
V14	Audio Output	6V6GT	6V6GT	7S	
V15	Sync Amplifier-Sync Separator	12AU7	12AU7	9A	
V16	Vert. Oscillator-Sync Phase Inv.	6SN7GT	6SN7GT	8SD	
V17	Vert. Output	6S4	6S4	9AC	
V18	Horiz. AFC	6AL5	6AL5	6BT	
V19	Horiz. Mult.	6SN7GT	6SN7GT	8SD	
V20	Horiz. Output	6DQ6GT	6DQ6GT	8AM	
V21	Horiz. Output	6DQ6GT	6DQ6GT	8AM	
V22	Damper	6W4GT	6W4GT	4CQ	
V23	Damper	6W4GT	6W4GT	4CQ	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	LV Rectifier	5U4G	5U4G	5T	
V26	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SPARTON PART No	SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V27	21FP4A	21FP4A 21FP4 ①	12C	① Circuit changes necessary

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	±40	475		AFH2-72		BO53		FP262	TVL-2830	
B	±40	475	PA4307-13							
C2A	±40	250		AFH3-43		CO34		FP378.8	TVL-3785	
B	±40	250	PA4307-31							
C	±10	200								
C3A	±40	475		AFH3-50				FP476	TVL-4840	
B	±20	450	PA4307-22	PR5450/20		DO17				
C	±20	450								
C4A	±100	50		AFH3-142		C109				
B	±80	450	PA4307-23	PR350/20		BR205A			TVL-3704	
C	±20	50								
C5	5	50	PA4308-3	PRS150/4		BR550		TC30	TVA-1303	
C6	2	50	PA4303-14	PRS150/4		BBR-2-50T		TC302	TVA-1301	
C7	3-9				829-3					
C8	800			CN-1-001	MFT-1000				503C-D1	
C9	3			SI3NP0			NP0K-030	ZT-553		
C10	.5-3				829-3			CT565A		
C11	47			BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C12	800			CN-1-001	MFT-1000				503C-D1	
C13	1000			BPD-001	D6-102	TM5D1	801-001	DC-521	5HK-D1	
C14	1.5			SD.5NP0	TCZ-1.5		NP0K-1R5	Z7-5515	5TCCB-V15	
C15	47			BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C16	.5-3				829-3			CT565A		
C17	10			SD0NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	5			SI5N750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C19	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	6.8			SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C21	800			CN-1-001	MFT-1000				503C-D1	
C22	800			CN-1-001	MFT-1000				503C-D1	
C23	800			CN-1-001	MFT-1000				503C-D1	
C24	120			SI20	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C25	6.8		PA4328-13	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C26	100		PA4332-3	SD00NP0	D6-101		NP0-333-101	ZT-531	5TCC-T1	
C27	1000		HK36M-102	SD000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C28	3.3		PA4328-4							
C29	100		PA4332-3	SD00NP0	TCZ-100		NP0-333-101	ZT-531	5TCC-T1	
C30	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C31	5000		PA4334-1	BPD-005	MD-502	TM5 D 5	81L-005	DC-525	5HK-D5	
C32	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C33	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C34	270		HK36M-271	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C35	1000		HK36M-102	SD000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C36	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C37	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C38	270		HK36M-271	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C39	1000		HK36M-102	SD000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C40	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C41	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C42	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C43	270		HK36M-271	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C44	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C45	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C46	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C47	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C48	6.8		PA4328-13	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C49	4.7		PA4328-10	SI4.7NP0	TCZ-4.7		NP0K-4R7	ZT-5547	5TCCB-V47	
C50	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C51	47		CC30A-470F	SI47NP0	TCZ-47		NP0L-470	ZT-545	5TCC-Q47	
C52	.1	400	PC40GL-104	P468-1	DF-104	PTE4P1		PT401	4TM-P1	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C53	.001	600	PC42GM-102	P688-001	D6-102	PTE8D1	GP2L-102	PT621	6TM-D1	
C54	.1	600	PC40GM-104	P683-1	DF-104	PTE6P1		PT601	6TM-P1	
C55	2.2		PA4328-1							
C56	100		PA4332-3	SD00NP0	TCZ-100		NP0-333-101	ZT-531	5TCC-T1	
C57	100		PA4332-3	SD00NP0	TCZ-100		NP0-333-101	ZT-531	5TCC-T1	
C58	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C59	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C60	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C61	33		MC60E-330							
C62	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C63	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C64	2.2		PA4332-4	SI20NP0	TCZ-120		NP0-333-121		5TCC-T12	
C65	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C66	1000		HK36M-102	SI000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C67	.02	400	PC40HL-203	P468-02	DD-203	PTE4S2		PT412	4TM-S2	
C68	.01	400	PC40HL-103	P468-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C69	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C70	.02	600	PC40HM-203	P688-02	DD-203	PTE6S2		PT612	6TM-S2	
C71	.005	600	PC40GM-502	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C72	.03	200	PC40GK-303	P498-03		PTE6S3		PT413	6TM-S3	
C73	68	500	MC60E-680	1469-00007		5R5Q7			MS-47	
C74	.47	400	PC42DK-474	484-5		PJ4P5		PT405	4TM-P5	
C75	.047	600	PC40GM-503	P688-047	DF-503	PTE6S47	GP2L-102	PT647	6TM-S47	
C76	.001	600	PC42GM-102	P688-001	D6-102	PTE8D1		PT621	6TM-D1	
C77A	.002			P688-002	D6-202	PTE6D2	GP2-333-202	PT622		
B	.005		♦PA4339-4	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	♦34C17	
C	.01			P688-005	D6-502	PTE8D5	GP2-333-502	PT625		
C78	4700	500	MC61F-472	1464-005		1DR5D5		MCB465	MS-25	
C79	2000	500	MC61E-202	1467-002	D6-202	1W5D2	GP2-333-202	MC457	1FM-22	
C80	.04	400	PC40GL-404	P468-1	DF-104	PTE4P1		PT401	4TM-P1	
C81	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C82	.1	400	PC40GL-104	P468-1	DF-104	PTE4P1		PT401	4TM-P1	
C83	.1	400	PC40GL-104	P468-1	DF-104	PTE4P1		PT401	4TM-P1	
C84	.0033	600	PC40GM-302	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D3	
C85	1000	500	MC61E-102	1464-001		2R5D1		MCE255	MS-21	
C86	1000	500	MC61E-102	1464-001		2R5D1		MCE255	MS-21	
C87	.01	400	PC40FL-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C88	5100	500	MC61E-512							
C89	.05	200	PC40GK-503	P288-05	DF-503	PJ3S5		PT415	2TM-S5	
C90	220	500	MC60E-221							
C91	3900	500	MC63F-392	1464-004		1DR5D4		MCB463	MS-24	
C92	270	500	MC60E-271							
C93	390	500	MC60E-391	1469-0004		5R6T4		MCE243	MS-34	
C94	.01	400	PC40GL-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C95	.047	400	PC40HL-503	P488-047	DF-503	PTE4S47		PT447	4TM-S47	
C96	.25	200	PC40GK-254	P488-25		PJ2P25		PT4025	2TM-P25	
C97	.1	400	PC40GL-104	P468-1	DF-104	PTE4P1		PT401	4TM-P1	
C98	.1	400	PC40GL-104	P468-1	DF-104	PTE4P1		PT401	4TM-P1	
C99	500	20000	PA4342-2	HV20C	TV3-502	MMC-20T5	413-501		20DK-T5	
C100	.25	400	PC40GL-254	P488-25		PTE4P25		PT4025	4TM-P25	
C101	56	2000	PA4334-5						20GA-Q56	
C102	5000		PA4334-1	BPD-005	MD-502	TM5D5	81L-005	DC-525	5HK-D5	
C103	.047	600	PA4346-1	689ZX-05		PJ685		PT647	6TM-S47	Note 1

Note 1. Not used in all Models.
♦ Items C77A, C77B, C77C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: SPARTON PART No	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg	½	PA-4450-2	QJ-468*	RTV-412		UF16L	Tone-Panel
B	330KΩ	½					AN354T74	Volume Tap@ 60KΩ-Rear
C	Switch						US-27	Attach to R1B
R2A	50KΩ	½	PA-4457	QJ-470 •	RTV-410		UF54L	Horiz. Hold-Panel
B	1 Meg	½					UR16L	Vert. Hold-Rear
R3A	25KΩ	½	PA-4457	QJ-469**	RTV-411		UF253L	Contrast-Panel
B	100KΩ	½					UR15L	Brightness-Rear
R4A	1000Ω	2	PA-4446	WK-1000	A43-1000	VK-129	R1000L	Horiz. Drive-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R4A
R5A	5000Ω	2	PA-4411	WK-5000	A43-5000	VK-135	R5000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A
R6A	2.5Meg	½	PA-4454	QU-239	AG-84-5	AB-83	SU-565	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	2.5Meg	½	PA-4454	QU-239	AG-84-5	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A

♦ UNIVERSAL REPLACEMENT-(MALLORY EXACT DUPLICATE PART NO. UE1003).
† UNIVERSAL REPLACEMENT-(MALLORY EXACT DUPLICATE PART NO. UE814).
* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B1-137 & P1-118 (Panel) B18-122K & R1-130 (Rear) & SWITCH 76-2.
** CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENTS & SHAFTS B1-120 & P1-112(Panel) B11-128 & R1-126 (Rear).
♦ CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-123 & P1-112 (Panel) B11-137 & R1-126 (Rear).

RESISTORS

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R8	15KΩ	½			
R9	47KΩ	½		BTS-47K	
R10	100KΩ	½			
R11	160KΩ-5%	½		BTS-160K-5%	
R12	15000Ω	½		BTS-1500	
R13	100KΩ-5%	½			
R14	10KΩ	½		BTS-10K	
R15	220K Ω	½		BTS-220K	
R16	10KΩ	½		BTS-10K	
R17	15KΩ	½			
R18	100Ω	½	BR12N-101	BTS-100	
R19	1000Ω	½	BR12N-102	BTS-1000	
R20	33KΩ	½	BR12S-333	BTS-33K	
R21	56KΩ	½	BR12S-563	BTS-56K	
R22	150KΩ	½	BR12S-154	BTS-150K	

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R23	3600Ω-5%	½	BR12G-362	BTS-3600-5%	
R24	470Ω-5%	½	BR12G-470	BTS-47-5%	
R25	82Ω-5%	½	BR12G-820	BTS-82-5%	
R26	100Ω-5%	½	BR12N-101	BTS-100-5%	
R27	1000Ω	½	BR12N-102	BTS-1000	
R28	4700Ω-5%	½	BR12G-472	BTS-4700-5%	
R29	100Ω-5%	½	BR12G-101	BTS-100-5%	
R30	100Ω	½	BR12N-101	BTS-100	
R31	1000Ω	½	BR12N-102	BTS-1000	
R32	15KΩ-5%	½	BR12G-153	BTS-15K-5%	
R33	27KΩ	½	CR12S-273	BTA-27K	
R34	3300Ω-5%	½	BR12G-332	BTS-3300-5%	
R35	100Ω-5%	½	BR12G-101	BTS-100-5%	
R36	100Ω	½	BR12N-101	BTS-100	
R37	4300Ω-5%	½	BR12G-432	BTS-4300-5%	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R38	120Ω	½	BR12S-121	BTS-120	
R39	150Ω	½	BR12N-101	BTS-100	
R40	100Ω	½	BR12N-101	BTS-100	
R41	3900Ω-5%	½	BR12G-392	BTS-3900-5%	
R42	6800Ω	½	BR12G-682	BTS-6800	
R43	27KΩ	½	BR12S-273	BTS-27K	
R44	5600Ω-5%	2	DR12G-562	BTB-5600-5%	
R45	100KΩ	½	BR12S-103	BTS-100K	
R46	220KΩ	½	BR12S-224	BTS-220K	
R47	470KΩ	½	BR12S-474	BTS-470K	
R48	330KΩ	½	BR12S-334	BTS-330K	
R49	1000Ω	½	BR12N-102	BTS-1000	
R50	15KΩ	½	BR12S-153	BTS-15K	
R51	2200Ω-5%	½	BR12G-222	BTS-2200-5%	
R52	330KΩ	½	BR12S-334	BTS-330K	
R53	68KΩ	½	CR12S-683	BTA-68K	
R54	47KΩ	½	BR12S-473	BTS-47K	
R55	2.2Meg	½	BR12S-225	BTS-2.2Meg	
R56	100KΩ	½	BR12S-104	BTS-100K	
R57	820-5%	½	BR12G-820	BTS-82-5%	
R58	1000Ω	½	BR12N-102	BTS-1000	
R59	100KΩ	½	BR12N-104	BTS-100K	
R60	1200Ω-5%	½	BR12G-122	BTS-1200-5%	
R61	1000Ω	½	BR12N-102	BTS-1000	
R62	150Ω	½	BR12G-151	BTS-150	
R63	47KΩ	½	BR12S-473	BTS-47K	
R64	4700Ω-5%	½	BR12G-472	BTS-4700-5%	
R65	4700Ω-5%	½	BR12G-472	BTS-4700-5%	
R66	10KΩ	½	BR12S-103	BTS-10K	
R67	6.7Meg	½	BR12S-675	BTS-6.7Meg	
R68	6.8Meg	½	BR12N-685	BTS-6.8Meg	
R69	270KΩ	½	BR12S-274	BTS-270K	
R70	270KΩ	½	BR12S-274	BTS-270K	
R71	470KΩ	½	BR12N-474	BTS-470K	
R72	390Ω	1	CR12S-391	BTA-390	
R73	1500Ω	10	PA4200-19	1 3/4A-1500	
R74	180KΩ	½	BR12S-184	BTS-180K	
R75	18KΩ	½	BR12S-183	BTS-18K	
R76	2.2Meg	½	BR12N-225	BTS-2.2Meg	
R77	12KΩ	½	BR12S-123	BTS-12K	
R78	6.7Meg	½	BR12S-675	BTS-6.7Meg	
R79	39000-5%	½	BR12G-392	BTS-3900-5%	
R80	3300Ω-5%	½	BR12G-332	BTS-3300-5%	

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	NOTES
R81	15KΩ	½	BR12S-153	BTS-15K	
R82	8200Ω	½	BR12S-822	BTS-8200	
R83	8200Ω	½	BR12S-822	BTS-8200	
R84	1.1Meg-5%	½	BR12G-115	BTS-1.1Meg-5%	
R85	100KΩ	½	BR12S-104	BTS-100K	
R86	6.8Meg	½	BR12S-685	BTS-6.8Meg	
R87	100KΩ	½	BR12S-104	BTS-100K	
R88	100KΩ	½	BR12S-104	BTS-100K	
R89	4700Ω	½	BR12S-472	BTS-4700	
R90	2.2Meg	½	BR12N-225	BTS-2.2Meg	
R91	3900Ω	½	BR12N-391	BTS-390	
R92	10KΩ	2	DR12S-103	BTB-10K	
R93	10KΩ	2	DR12S-103	BTB-10K	
R94	560Ω	½	BR12S-561	BTS-560	
R95	560Ω	½	BR12S-561	BTS-560	
R96	100KΩ	½	BR12S-104	BTS-100K	
R97	100KΩ-5%	½	BR12S-104	BTS-100K-5%	
R98	100KΩ-5%	½	BR12S-104	BTS-100K-5%	
R99	4.7Meg	½	BR12N-475	BTS-4.7Meg	
R100	470KΩ	½	BR12S-474	BTS-470K	
R101	22KΩ	½	CR12S-223	BTA-22K	
R102	1200Ω-5%	½	BR12G-122	BTS-1200-5%	
R103	56000-5%	1	CR12G-562	BTA-5600-5%	
R104	100KΩ	½	BR12S-104	BTS-100K	
R105	200KΩ-5%	½	BR12G-204	BTS-200K-5%	
R106	10KΩ	½	BR12S-103	BTS-10K	
R107	10KΩ	2	DR12S-103	BTB-10K	
R108	100Ω	½	BR12N-101		
R109	470KΩ	½	DR12S-474	BTS-470K	
R110	1200	2	DR12S-121	BW-2-120	
R111	2700	1	CR12S-271	BW-1-270	
R112	100Ω	1	CR12N-101		
R113	100Ω	½	BR12N-101		
R114	100Ω	1	CR12N-101		
R115	39Ω	½	BR12S-390	BTS-39	
R116	33KΩ	2	DR12S-333	BTB-33K	
R117	39KΩ	2	DR12S-393	BTB-39K	
R118	1500Ω	1	CR12N-152	BTA-1500	
R119	8200Ω	2	DR12S-822	BTB-8200	
R120	82000	2	DR12S-823	BTB-8200	
R121	5.1Ω		BRW12S-51		
R122	1 Meg	½	CR11N-105		

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC	656VCT	315VCT	5VAC	AB-44032-1					
	@ 2.18A	.180ADC	.085ADC	@ 3A						
		SEC. 4	SEC. 5	SEC. 6						
		5VAC	6.3V AC	6.3VAC						
		@ 3A	@ 2.4A	@ 9.7A						

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA: SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T2	150Ω	820Ω	AB-47006-4	A-8111	A-3000	TBO-5 ①	A-97X	208T2	Vert. Osc. Trans. Horiz. Output Trans.
T3	279Ωtap	4.8Ω tap	PC-70012F		HVO-10④				
	@ 29Ω	@ 4Ω							
		SEC. 2							
		3Ω							
		SEC. 3							
		0Ω							
T4	690Ω	6.5Ω	AB-44062-7	A-8115	A-3025	TBO-I	A-101U	204T2	Vert. Output Trans.
T5A	12Ω		AB-4307-1 ③	DY-8A ④	MDF-70 ④	TY-3 ⑤	Y-13 ⑤	206D1 ⑤	Horiz. Deflection Coils
B	84Ω								Vert. Deflection Coils
T6	6Ω		AA-6400-3		MWC-2 ⑤				Horiz. Linearity Coil
T7	8Ω		AA-6400-3		MWC-3 ⑤				Width Coil

① Drill one new mounting hole.
② Connect original terminal #6 to new terminal #1, original terminals 1 and 2 to new terminal #4, original #3 to new #6, original #4 to #9, original #5 to #7.
③ Yoke assembly contains yoke PC-700IRA.
④ Use original deflection coil network if necessary.
⑤ Use original deflection coil network
⑥ Enlarge mounting hole.
⑦ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI	DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No	STANCOR PART No	MERIT PART No	CHICAGO PART No	TRIAD PART No	NOTES
T8	5.4KΩ	3.7Ω	261Ω	.32Ω	AB-4406-3	A-3823	A-3020	RO-13①	S-92	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: SPARTON PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1A	10"	PM	3.7Ω	PC-53000-1K① PC-53000-12①	10J11	10A31	① Used in Models 5382A, 5383A, 5384A, 5386A. ② Used in Models 10352 and 10353
B	6"	PM	3.7Ω	PC-53000-43 ②	67J4	6A1	③ Used in Models 5342A and 5343A

SPARTON MODELS 5342A, 5343A, 5382A, 5383A, 5384A, 5386A, 10352, 10353 (Ch. 27D213) 5382B (Ch. 27D213-A)

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.180ADC	108Ω	3 Hy.	AB47009-1		C-2994	TR-3300 ①	C-15X
L2	.085ADC	108Ω	3 Hy.	AB47009-1		C-2994	TR-3300 ①	C-15X

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SPARTON PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L3	Ant. Coils	0Ω CT	0Ω					
L4	Fil. Choke	0Ω						
L5	Neutr. Coil	0Ω						
L6	RF, Mixer Grid & Osc. Coils	0Ω						
L7	Fil. Choke	0Ω						
L8	RF Choke	0Ω						
L9	1st. Video IF	.9Ω						
L10	RF Choke	1.2Ω						
L11	Sound Trap	0Ω		AB43523-12		TV-112	6171	
L12	Fil. Choke	.1Ω		AA6651-1			4608	3.2 Microhenries
L13	Adj. Channel Sound Trap	0Ω		AB43523-13			6171A	
L14	2nd. Video IF	.1Ω		AA6408-1	17-1003	TV-102	6188	
L15	Fil. Choke	.1Ω		AA6651-1			4608	3.2 Microhenries
L16	3rd. Video IF	.1Ω		AA6408-1	17-1004	TV-102	6189	
L17	Fil. Choke	.1Ω		AA6651-1			4608	3.2 Microhenries
L18	4th. Video IF	.1Ω		AA6408-1	17-1004	TV-103	6189	
L19	RF Choke	2.9Ω		AA6650-1			4626	25 Microhenries
L20	Fil. Choke	.1Ω		AA6651-1			4608	3.2 Microhenries
L21	5th. Video IF	.4Ω		AA6364-1				
L22	RF Choke	2.9Ω		AA6650-1			4626	25 Microhenries
L23	Fil. Choke	.1Ω		AA6651-1			4608	3.2 Microhenries
L24	Series Peaking Coil	8Ω		AA6402-6	19-3160 *		4644 *	146 Microhenries, wound on 4.7KΩ
L25	Shunt Peaking Coil	19Ω		AA6613-8	19-3660	TV-188	4650	600 Microhenries
L26	Series Peaking Coil	10Ω		AA6402-7	19-4200	TV-184 ■	4646 ■	213 Microhenries, wound on 6.8KΩ resistor
L27	4.5MC Trap	1.8Ω		AA6407-1	20-1004	TV-151	1470	
L28	Shunt Peaking Coil	14.5Ω		AA6613-10	19-1923	TV-188	4566	420 Microhenries
L29	1st. Sound IF	1.8Ω		AA6364-2	17-1031			
L30	2nd. Sound IF	2.2Ω	2.2Ω	AA6667-5	17-1021 †	TV-108 †	1466†	
L31	Ratio Det.	4.6Ω	1.2Ω CT	AA6684-4	17-3493 ▲	TV-110 †▲	6205 ▲	Tertiary Winding -.6Ω
L32	Horiz. Osc.	68Ω		AA6403-2	19-1576	TV-163	6210	
L33	RF Choke	.6Ω		AA6650-8			4608	3.2 Microhenries

* Parallel with 4.7KΩ resistor
■ Parallel with 6.8KΩ resistor
† Drill new mounting holes.
▲ Use adaptor plate, disconnect C64
▲ Disconnect C64

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SPARTON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG-P/T	3/8A ⓢ 250V	BA4212-3		318.375		GJV-3/8	

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
M2	Dial Light		Type No. 47
M3	RF Tuner	PD-93158-1	
M4	Centering Magnet		
M5	Ion Trap Magnet	PA-1248-3	
M6	Correction Magnet	PC-63119B	
	Mask	PD-93058	
	Safety Glass	PB-40354-3	
	Knob	PA-5659-1	Infrequent Control Cover (Inner) Models 5342A, 5382A, 5384A, 10352
	Knob	PA-5659-2	Infrequent Control Cover(Inner) Models 5343A, 5383A, 5386A, 10353
	Knob	PA-5660-1	Infrequent Control Cover(Outer) Models 5342A, 5382A, 5384A, 10352
	Knob	PA-5660-2	Infrequent Control Cover(Outer) Models 5343A, 5383A, 5386A, 10363
	Knob	AB-43594-1	Off/On Volume Models 5342A, 5382A, 5384A, 5386A
	Knob	AB-43594-2	Off/On Volume Models 5343A, 5382A, 5386A
	Knob	PB-40364-1	Tone Control Models 5342A, 5382, 5384, 10352
	Knob	PB-40364-2	Tone Control Models 5343A, 5383A, 5386A, 10353
	Knob	AB-43593-1	Channel Tuner Models 5342A, 5382A, 5384A, 10352
	Knob	AB-43593-2	Channel Tuner Models 5343A, 5383A, 5386A, 10353
	Knob	PB-40363-1	Fine Tuning Models 5342A, 5382A, 5384A, 10352
	Knob	PB-40363-2	Fine Tuning Models 5343A, 5383A, 5386A, 10353

TROUBLE SHOOTING AIDS (CONT.)

AUDIO

WEAK OR NO SOUND

Substitue V10, V11, V12, V13 and V14. Check audio IF alignment. Check adjustment of ratio detector. Check audio coupling capacitors and T8.

BUZZ

Check ratio detector alignment . If buzz is still objectionable substitute V12 and check C5. Then readjust ratio detector secondary , A12.

DISTORTED

Substitute V10, V11, V12, V13 and V14. Check stages V13 and V14 using audio signal generator. If no distortion is present check audio IF alignment and adjustment of ratio detector.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Substitute V19, V20, V21, V22, V23 and V24. Check waveform at W14.

If Satisfactory	If Unsatisfactory
Check R121,R122, C99, C95, T3 and other associated components.	Check C92, C93, C94, C90 and other components associated with V19.

INSUFFICIENT HIGH VOLTAGE

Substitute V19, V20, V21, V22, V23 and V24. Proceed as outlined under "LOSS OF HIGH VOLTAGE". Check picture tube.

BLOOMING

Substitute V22, V23 and V24. Check R121, R122, C99 and T3. Check picture tube.

POWER

SMALL AND/OR DIM RASTER

Substitute V26. Measure B+ at junction of C1B and L1.

If Low	If Satisfactory
Check for B+ shorts. Check C1A, C1B, C3A, R73 and C4B.	Proceed as outlined under "HORIZ-ONTAL, INSUFFICIENT SWEEP".

WEAK SOUND, POOR PICTURE, POOR SYNC

Substitute V25. Check C2A, C2B and L2.

DIM PICTURE, POOR FOCUS

Substitute V26. Proceed as outlined under "SMALL AND/OR DIM RASTER".

GENERAL

RASTER, NO SOUND, NO PICTURE

Substitute V1, V2, V3, V4, V5, V6, and V17. Check components of the Video IF strip and video detector.

RASTER SOUND SNOWY PICTURE (HIGH SIGNAL AREA)

Substitute V1, V3, V4, V5 and V6.

RASTER , SOUND, NO PICTURE

Substitute V8. Check associated circuit components. Check picture tube.

INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

SET DEAD

Check AC switch on volume control. Check AC interlock. Check T1.

TOTAL LOSS OF SYNC

Substitute V15 and V16. Check associated circuit components.

POOR FOCUS

Check setting of focus control. Substitute V25 and V26. Check picture tube.

Symptoms shown above are assumed and are not indicative of the quality and workmanship of this receiving equipment.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the Channel Selector shaft.

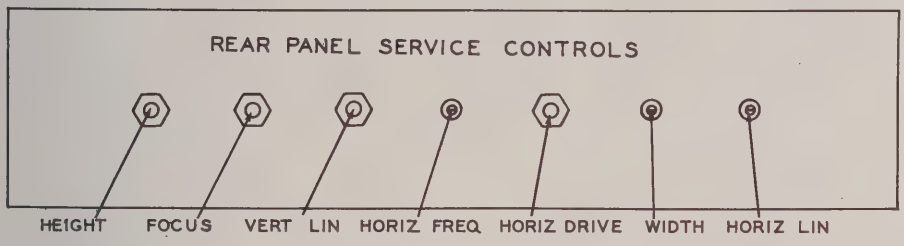
PICTURE TUBE SAFETY GLASS CLEANING

Remove 2 metal screws at bottom left side of safety glass. Remove safety catch. Remove 2 metal screws. Remove metal strip across bottom of safety glass. Let glass down, slide to right and remove glass from right side first. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator Circuit can be made from the rear panel of the chassis. Set the Horiz. Hold Control at the mid-position of its range and adjust the Horiz. Freq. slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector Buzz, adjust the Ratio Detector Secondary L31 located on bottom of chassis. (See tube placement chart).

FUSES

One fuse is used for Horiz. & Vert. Sweep Circuit protection. (For location see picture tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

...ITY OF
...NSHIP
...DE ST.
...ER, COLORADO

DISASSEMBLY INSTRUCTIONS

1. Remove 8 push on type control knobs from front panel.
2. Remove 6 wood & 1 metal screws. Remove rear cover.
3. Disconnect built-in antenna and speaker leads.
4. Remove 4 chassis bolts. Remove chassis.
5. Remove 4 speaker nuts. Remove speaker.

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

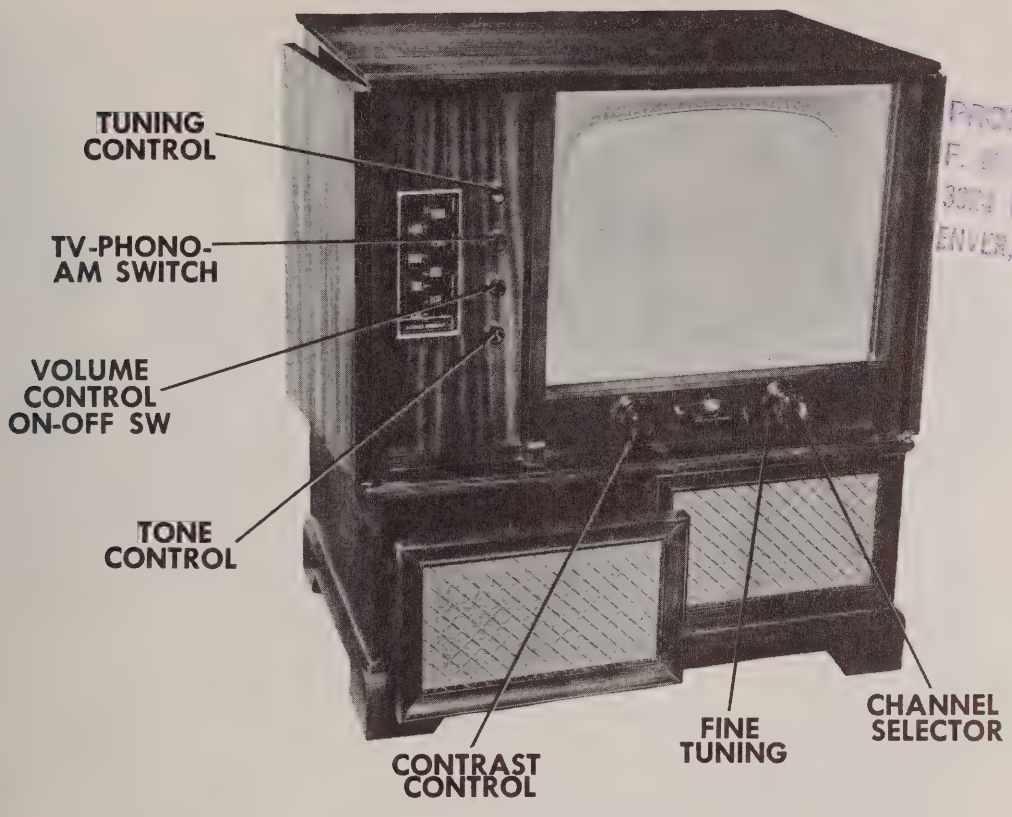
MODEL 2D1344B

TRUETONE
MODELS 2D1344A, B (Ch. 21MS36C)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

TRUETONE
MODELS 2D1344A, B (Ch. 21MS36C)



PROPERTY OF
F. [illegible]
3334 MORRISON ST
DENVER, COLORADO

TRUETONE MODEL 2D1344B

TRADE NAME	Truetone Models 2D1344A, 2D1344B (Ch. 21MS36C)
MANUFACTURER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	TV-AM-Phono Combination Receiver
TUBES	Twenty-Eight
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	(TV)1.72 Amp. @ 117 Volts AC,(Radio) .27 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13, Video IF 26.2MC, Sound IF 21.7MC (Intercarrier)(AM Radio) 540-1600KC, AM IF 455KC

INDEX

Alignment Instructions 6, 7
Drive Cord Stringing (Radio) 19
Disassembly Instructions 23
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 15 thru 19
Photographs
- Cabinet-Rear View 11
- Capacitor and Alignment Identification 4, 9
- Chassis-Bottom View (Radio) 22
- Chassis-Top View (Radio) 22
- Chassis-Top View (TV) 3
- Photographs (Cont)
- RF Tuner 10
- Resistor and Inductor Identification 13, 20

Resistance Measurements 8
Servicing in the Field 23
Schematic (Radio) 14
Schematic (TV) 2
Trouble Shooting Aids 12, 21
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

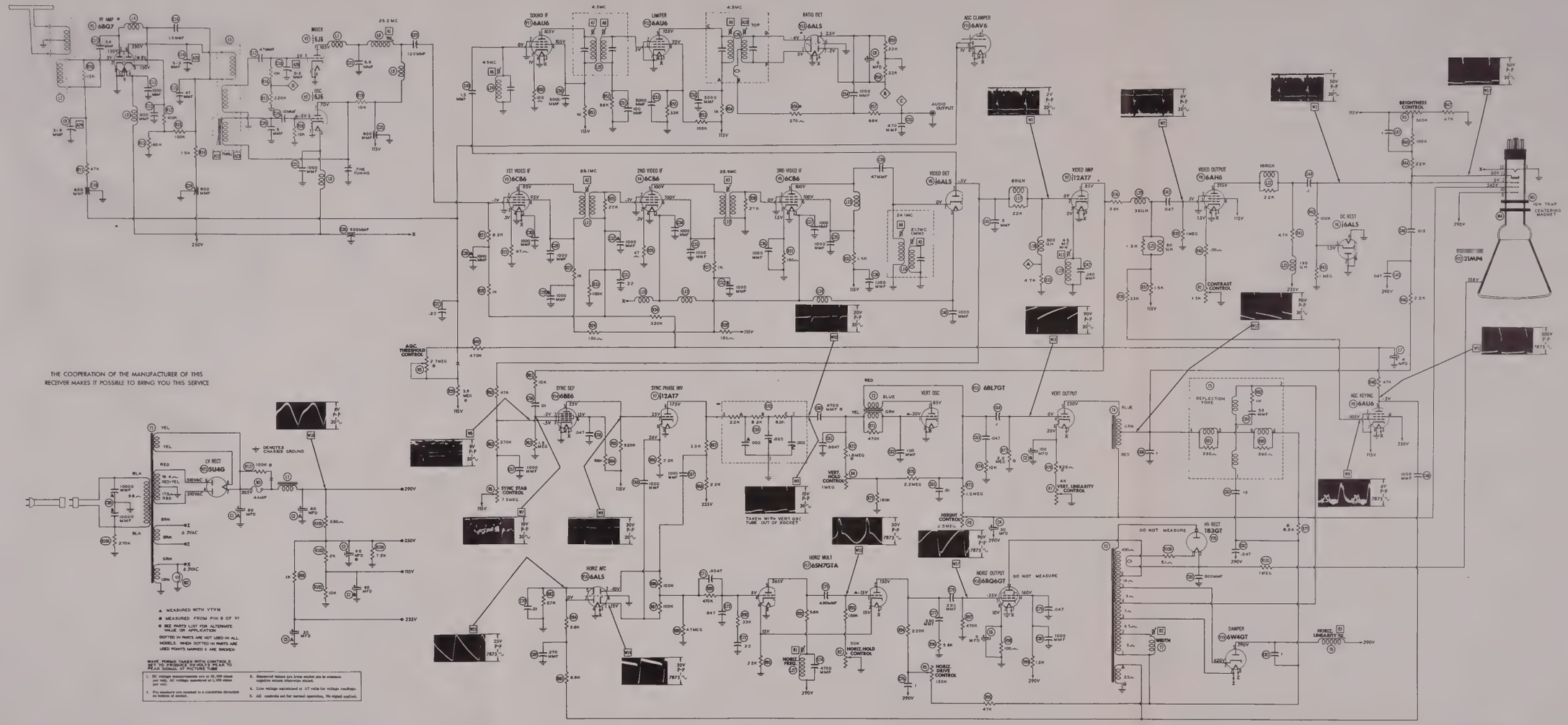
FOR SERVICE INFORMATION ON RECORD CHANGER, SEE V-M MODEL 950, PHOTOFACT SET 107, FOLDER 13, ALSO SUPPLEMENT SET 131, FOLDER 17, OR RECORD CHANGER MANUAL CM-3.

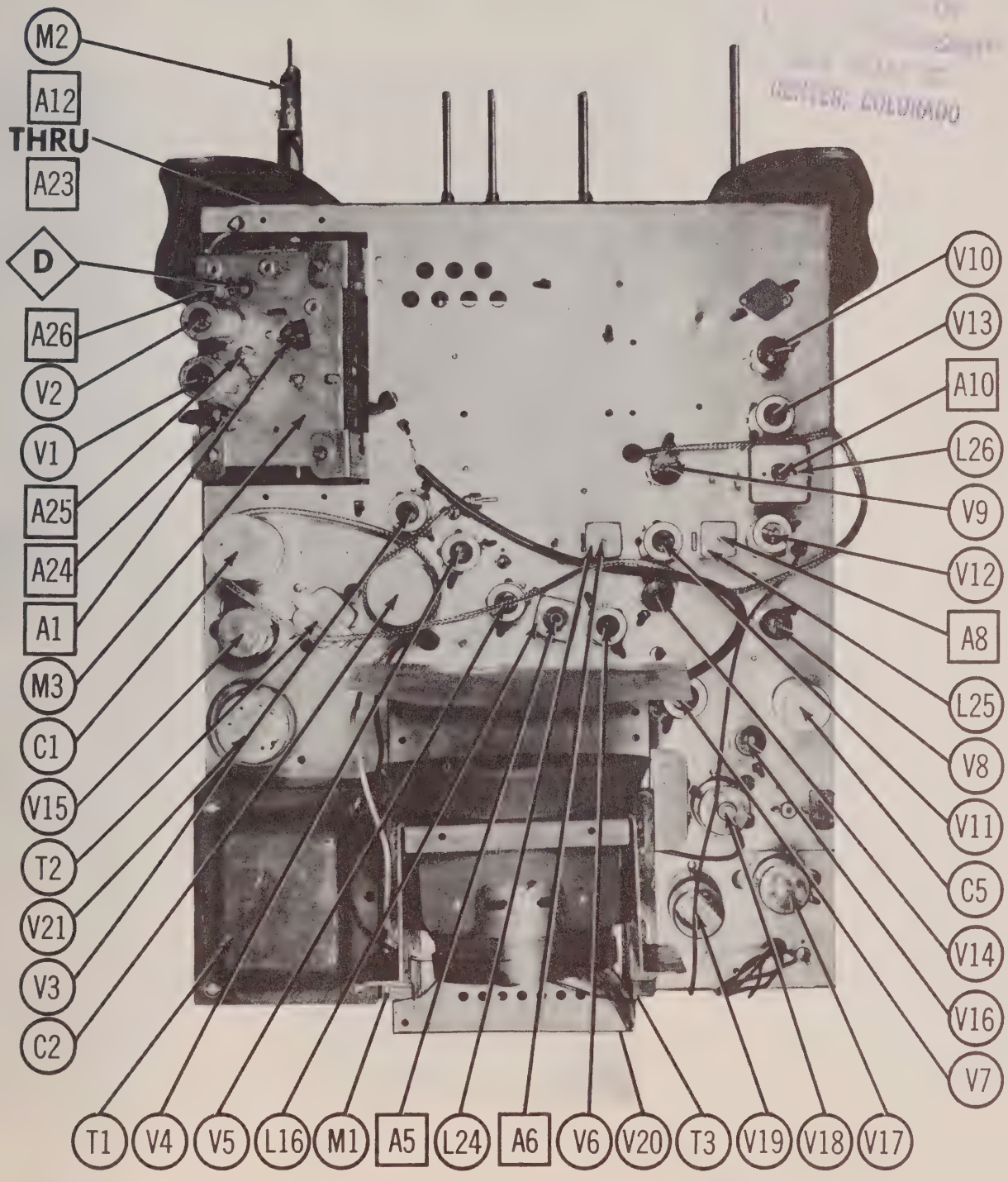
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

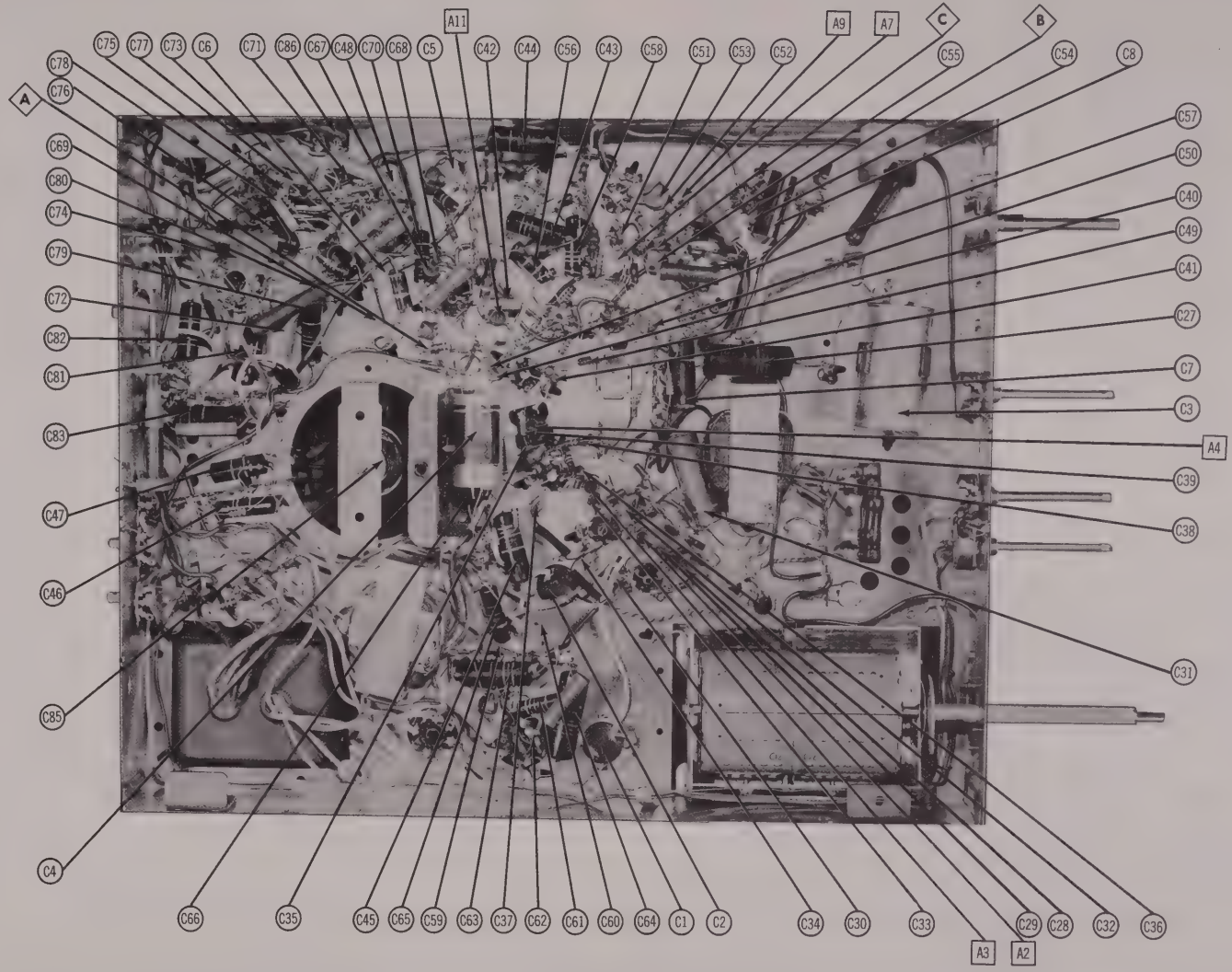
DATE 7-53 SET 210 FOLDER 13

TRUETONE
MODELS 2D1344A, B (Ch. 21MS36C)


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RF AMP
MIXER
OSC
SOUND IF
LIMITER
RATIO DET
AGC CLAMPER
AUDIO OUTPUT
1ST VIDEO IF
2ND VIDEO IF
3RD VIDEO IF
VIDEO DET
VIDEO AMP
VIDEO OUTPUT
DC REST
BRIGHTNESS CONTROL
ION TRAP CENTERING MAGNET
CONTRAST CONTROL
AGC THRESHOLD CONTROL
SYNC SEP
SYNC PHASE INV
SYNC STAB CONTROL
VERT OSC
VERT OUTPUT
VERT HOLD CONTROL
HEIGHT CONTROL
VERT LINEARITY CONTROL
AGC KEYING
DEFLECTION YOKE
LV RECT
HV RECT
DAMPER
WIDTH
HORIZ AFC
HORIZ MULT
HORIZ OUTPUT
HORIZ FREQ
HORIZ HOLD CONTROL
HORIZ DRIVE CONTROL
HORIZ LINEARITY
FINE TUNING
DENOTES CHASSIS GROUND
TAKEN WITH VERT OSC TUBE OUT OF SOCKET
DO NOT MEASURE
WAVE FORMS TAKEN WITH CONTROL S SET TO PRODUCE 30 VOLTS P-P AT TV PEAK SIGNAL AT PICTURE TUBE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953
TRUETONE
MODELS 2D1344A, B (Ch. 21MS36C)

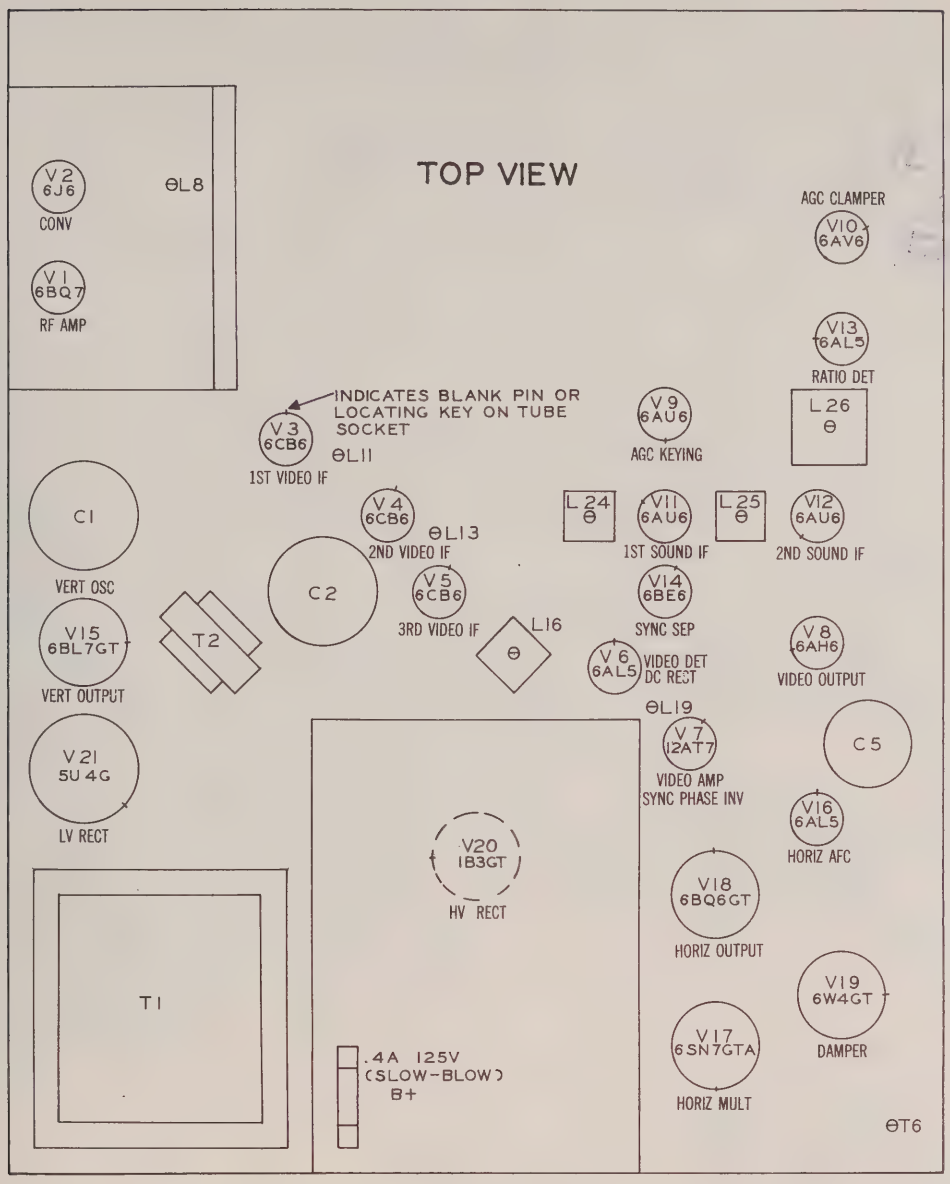


TV CHASSIS TOP VIEW



TV CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V21, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster -V7, V8, V22
Has pic, no sound - V11, V12, V13, V26, V27
Overloaded picture - V9, V10

SYNC FAILURE
No vert. sync - V7, V15
No horiz. sync - V7, V16, V17
No vert. or horiz. sync - V7, V14

SWEEP FAILURE
No raster, has sound - V17, V18, V19, V20, V22
No vertical deflection - V15
Poor vert. linearity or foldover - V15
Poor horiz. linearity or foldover -V17, V18, V19
Narrow picture -V17, V18, V19, V20, V21
Vert. off freq. - V7, V15
Horiz. off freq. - V7, V16, V17

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multi-vibrator tube, V17.

VIDEO IF ALIGNMENT

Remove the converter tube and replace with a 6J6 which has pin removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 4.5 volt battery to the ungrounded side of C31. Connect the positive lead to chassis.
When connecting VTVM use a filter consisting of 22KΩ in series with the high lead and .005MFD across the input terminals.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis	25.2MC	Any	DC probe to point (A) Common to chassis.	A1	Adjust for maximum deflection. Attenuate generator output for not more than 2 Volts at VTVM.
2.	"	"	23.1MC	"	"	A2	"
3.	"	"	25.9MC	"	"	A3	"
4.	"	"	24.1MC	"	"	A4	"
5.	"	"	21.7MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Use filter in scope leads as used in VTVM alignment above.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.7MC 23.0MC 23.5MC 25.25MC 26.2MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response similar to Fig. 1. If necessary retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to pin 7 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A6, A7, A8, A9	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point (C) Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to pin 7 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A6, A7, A8, A9	Disconnect stabilizer capacitor C8. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
8.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A10	Reconnect capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Set contrast control at maximum contrast position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.001MFD	High side to pin 7 (plate) of 6AL5 (V6). Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig. 4) to pin 2 (grid) of picture tube. Common to chassis.	A11	Adjust for MINIMUM deflection.

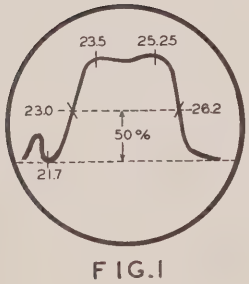


FIG. 1

FIG. 2

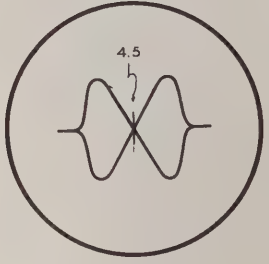


FIG. 3

TV ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect 4.5 volt bias battery as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 2120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A12	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A13	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A14	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A15	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A16	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A17	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A18	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A19	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A20	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A21	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A22	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A23	

RF AND MIXER ALIGNMENT

Remove 4.5 volt bias battery and connect 1.5 volt battery across C27 with positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (D). Low side to chassis.	A24, A25, A26	Adjust for response similar to Fig. 6.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 6. If markers fall below 70% on any channel make compromise adjustments of A24, A25 and A26 with channel switch set to that channel then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

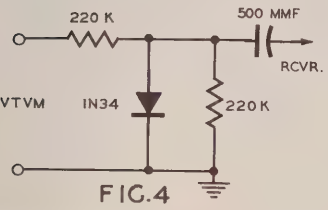


FIG.4

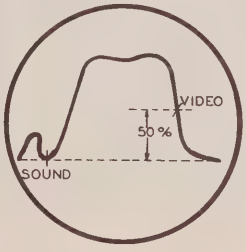


FIG.5

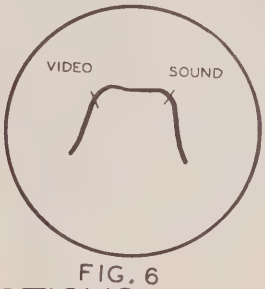


FIG. 6

RADIO ALIGNMENT INSTRUCTIONS

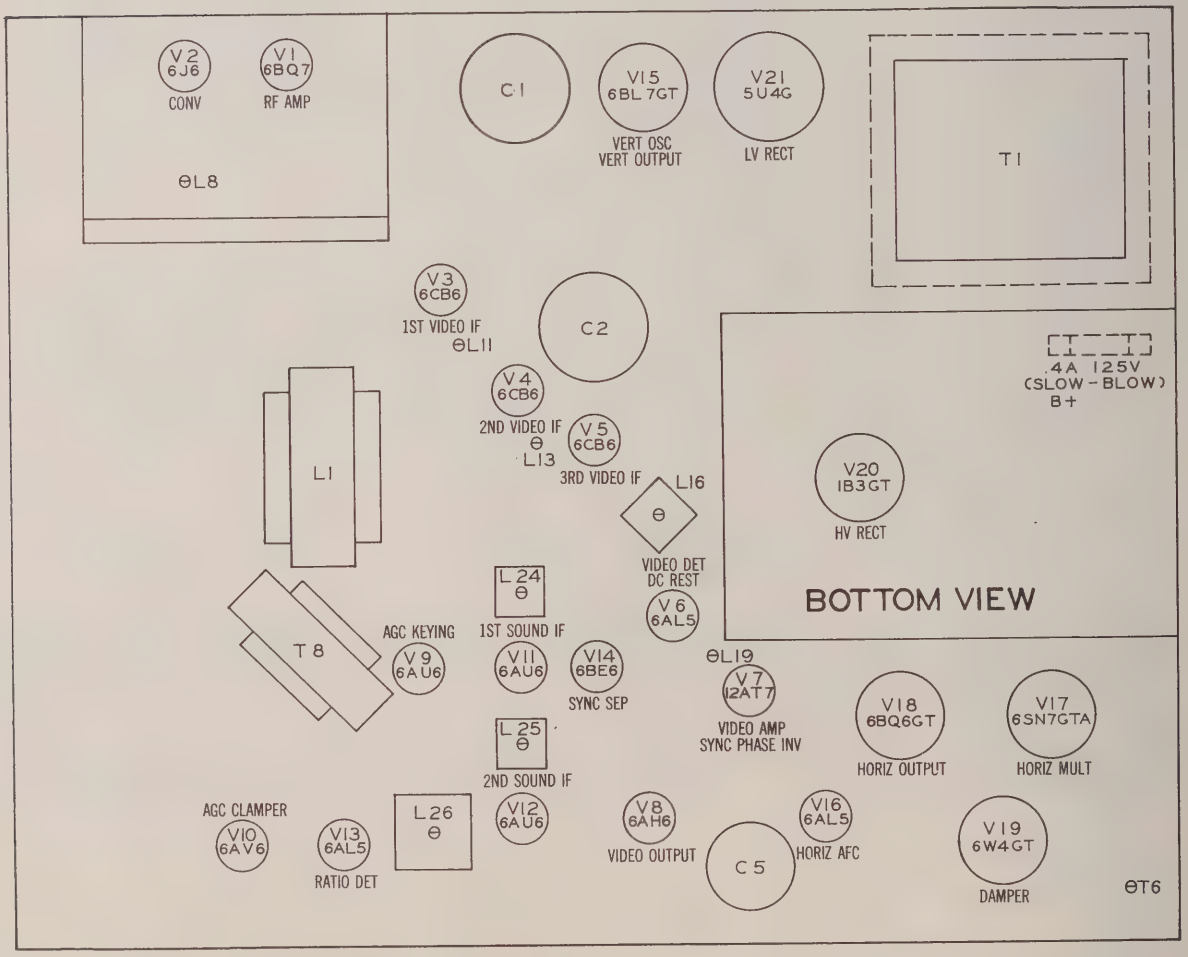
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
13.	.1MFD	High side to pin 7 (grid) of 6BE6 (V24). Low side to chassis.	455KC (400~Mod)	Radio	Tuning gang fully open.	Across voice coil.	A27, A28, A29, A30	Adjust for maximum output. Repeat adjustments untill no increase in output is noted.
14.	"	High side to pin 1 (grid) of 6BA6 (V23). Low side to chassis.	1620KC	"	"	"	A31	Adjust for maximum output.
15.	"	"	1400KC	"	Tune to 1400KC signal	"	A32	Adjust for maximum output while rocking tuning gang.
16.	50MMF	High side to external antenna terminal. Low side to chassis.	"	"	"	"	A33	Adjust for maximum output while rocking tuning gang. If pointer is not at 1400KC set pointer to 1400KC on the dial.

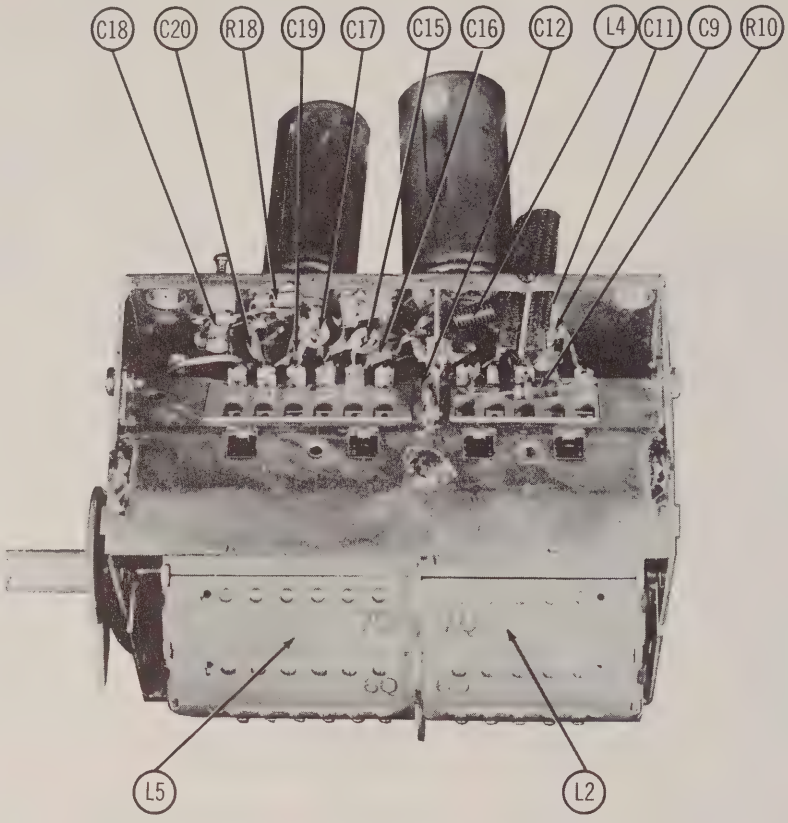
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	780KΩ	0Ω	.1Ω	0Ω	†1.9KΩ	†160KΩ	INF	0Ω
V 2	6J6	†12.4KΩ	†2.4KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	110KΩ	47Ω	.1Ω	0Ω	†3.6KΩ	†3.6KΩ	0Ω		
V 4	6CB6	100KΩ	47Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 5	6CB6	.2Ω	180Ω	.1Ω	0Ω	†3.8KΩ	†3.8KΩ	0Ω		
V 6	6AL5	.2Ω	0Ω	.1Ω	0Ω	1 Meg	0Ω	4.7KΩ		
V 7	12AT7	†9.5KΩ	4.7KΩ	.3Ω	0Ω	0Ω	†6.9KΩ	†820KΩ	2.2KΩ	.1Ω
V 8	6AH6	1 Meg	0Ω	.1Ω	0Ω	†6.1KΩ	†2.4KΩ	1KΩ		
V 9	6AU6	†35KΩ	†2.3KΩ	.1Ω	0Ω	470KΩ	†380Ω	†2.3KΩ		
V 10	6AV6	INF	0Ω	.1Ω	0Ω	730KΩ	730KΩ	INF		
V 11	6AU6	3Ω	0Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	100Ω		
V 12	6AU6	56KΩ	0Ω	.1Ω	0Ω	†3.4KΩ	†25.5KΩ	0Ω		
V 13	6AL5	INF	INF	0Ω	.1Ω	22KΩ	0Ω	22KΩ		
V 14	6BE6	50KΩ	0Ω	.1Ω	0Ω	†820KΩ	†74KΩ	1.5Meg		
V 15	6SN7GTA	2.5Meg	▲2.7Meg	0Ω	2.2Meg	▲7KΩ	2.2KΩ	.1Ω	0Ω	
V 16	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	9KΩ	0Ω	9KΩ		
V 17	6SN7GTA	170KΩ	▲420KΩ	2.2KΩ	5.1Meg	†5.6KΩ	2.2KΩ	.1Ω	0Ω	
V 18	6BQ6GT	5.7KΩ	0Ω	INF	†12KΩ	470KΩ	▲200KΩ	.1Ω	100Ω	Top Cap ▲25Ω
V 19	6W4GT	▲51Ω	INF	1.2Meg	5.1Meg	†65Ω	▲51Ω	▲16Ω	▲16Ω	
V 20	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ▲455Ω
V 21	5U4G	INF	5KΩ	INF	17.5Ω	1.4KΩ	16.4Ω	INF	5KΩ	
V 22	21MP4	0Ω	1.1Meg	Pin 6 †50Ω	Pin 10 ▲6.8KΩ	Pin 11 †280KΩ	Pin 12 .1Ω			

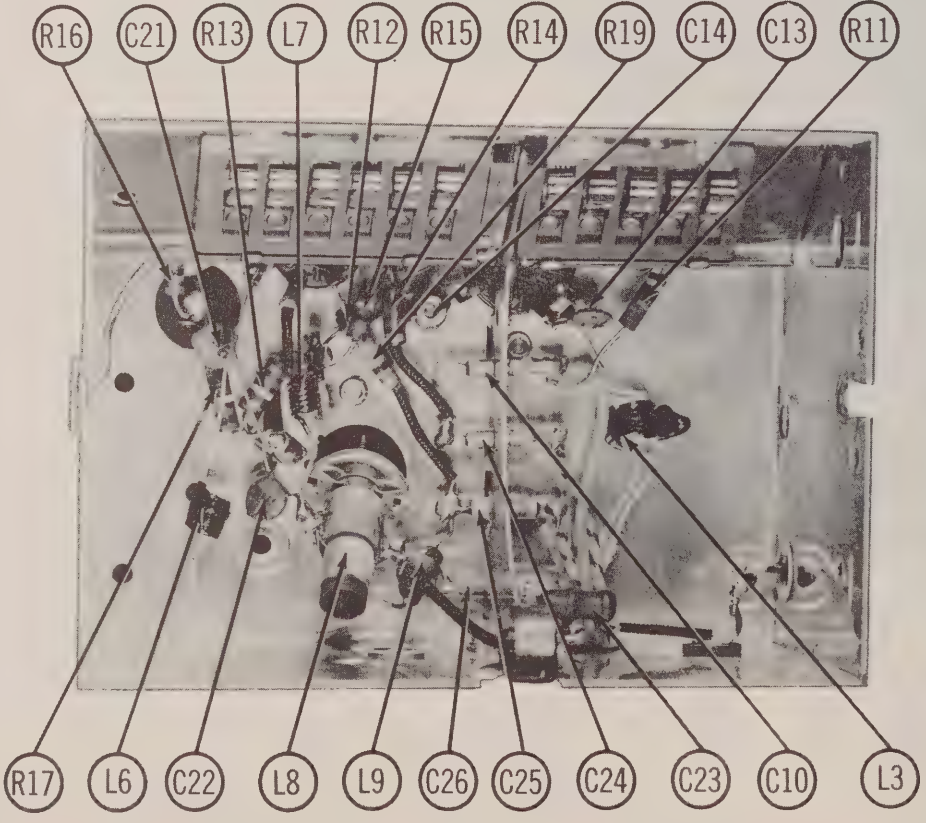
† MEASURED FROM PIN 8 OF V21.
▲ MEASURED FROM PIN 3 OF V19.



TUBE PLACEMENT CHART

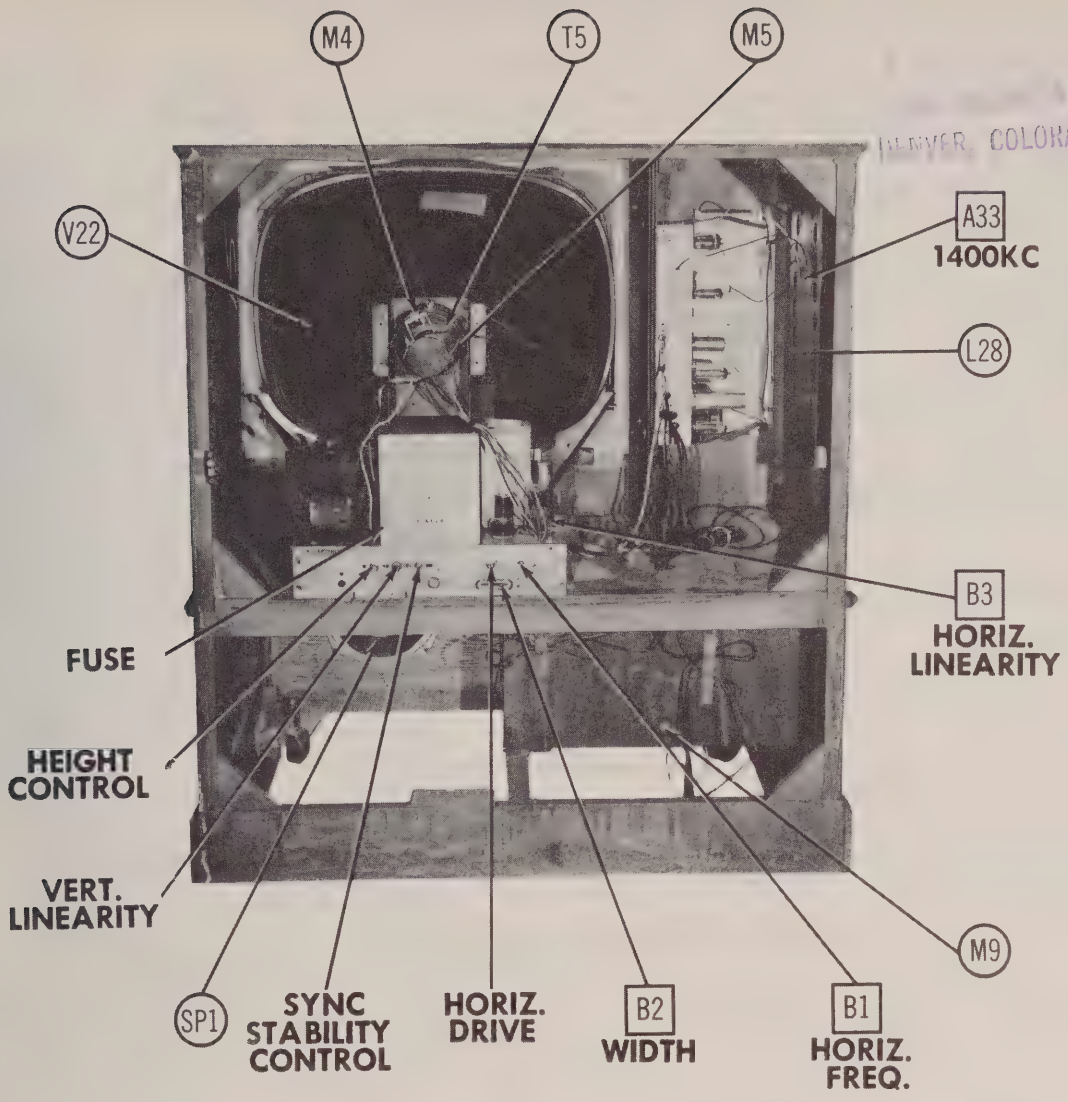


RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

DENVER, COLORADO



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Set the contrast control at minimum and advance the brightness control for normal brilliance.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal drive control clockwise as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right. If B3 or the horizontal drive control is adjusted recheck setting of B1.

If B3 is adjusted readjust the horizontal drive control.

SYNC STABILITY CONTROL ADJUSTMENT

Start from a fully counter clockwise position and turn the control slowly clockwise until a minimum amount of picture bending occurs.

In weak signal areas set the stability control for maximum picture stability.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Check horizontal deflection yoke for open. Check C83 for open.

INSUFFICIENT SWEEP

Substitute V17, V18, V19 and V21. Check waveform at W17.

If Satisfactory	If Unsatisfactory
Check C79, C80, C81, C82, T3 and other associated components.	Check C77 , C78, C76, R5 and other associated components.

DRIVE LINES

Substitute V17, V18 and V19. Check C76, R5, C77, C78 and other associated components.

COMPRESSED LEFT SIDE

Substitute V17, V18 and V19. Check adjustment of B2 and B3. Check T3, C81, C82 and other components associated with V18 and V19.

FOLDS

Substitute V18 and V19. Check C81, C82, T3 and other components associated with the horizontal output stage.

XMAS TREE EFFECT

Substitute V17. Check C74 for ppen. Check L27 for shorted turns.

VERTICAL

LOSS OF SWEEP

Substitute V15. Check T2, T4, C66, C64, R79 and other associated components. Check yoke for open or shorted windings.

INSUFFICIENT SWEEP

Substitute V15. Check T2, T4, yoke, C66, C64, R79, C2B, C4 and other components. associated with V15.

COMPRESSED AT BOTTOM

Substitute V15. Check C2B, C4, T4, yoke and other components of the vertical output stage.

COMPRESSED AT TOP

Substitute V15. Check C2B, C4, T4 and yoke.

FOLDS

Substitute V15. Check C63, C64, T4 and yoke.

EXCESSIVE VERTICAL FREQUENCY

Check C63 and C64 for open or change of value.

SYNC

HORIZONTAL

LOSS OF SYNC

Substitute V16 and V17. Check C67, C68, C70, C69, C71 and other components associated with V16 and V17.

CRITICAL SYNC

Substitute V16 and V17. Proceed as outlined under "HORIZONTAL, LOSS OF SYNC".

PULLING PICTURE

Check setting of sync stability control. Substitue V7 and V14. Check C71, C72 and C73.

VERTICAL

LOSS OF SYNC

Substitute V15. Check T2, C60 and the vertical integrator network. Check signal at W1 & W2 for signal overload and sync clipping.

CRITICAL SYNC

Substitute V7, V14 and V15. Check vertical integrator network, C60 and T2.

TRIGGERING

Substitute V7, V14 and V15. Check circuit near these tubes for filament lead dress.

VIDEO

LOSS OF VIDEO

Substitute V6, V7, V8 and V9. Check C43, C44 and other components associated with these stages. Check picture tube.

SOUND BARS

Check setting of local oscillator. Check adjustment of sound trap A11.

POOR RESOLUTION

Substitute V1, V3, V4, V5 and V6. Check video IF alignment. Check video IF components.

POOR CONTRAST

Substitute V6, V7 and V8. Check C43, C44, L17, L21 , L22 and picture tube. Check other components associated with V6, V7 and V8.

SMEAR

Substitute V6, V7 and V8. Check C43 and C44 for open or leaky. Check L17, L21, and L22 for open. Check R36, R37, R39 and R41 for change of value.

ONE BLACK BAR ACROSS PICTURE

Check RF utuner, Video IF, Video detector, Video amplifier and output tubes for heater to cathode leakage.

AUDIO

WEAK OR NO SOUND

Substitute V11, V12, V13, V26, V27 and V28. Check stages of V26, V27 and V28 by switching to radio position. If sound is satisfactory, check audio IF alignment. Check alignment of ratio detector and components of audio IF and detector stages.

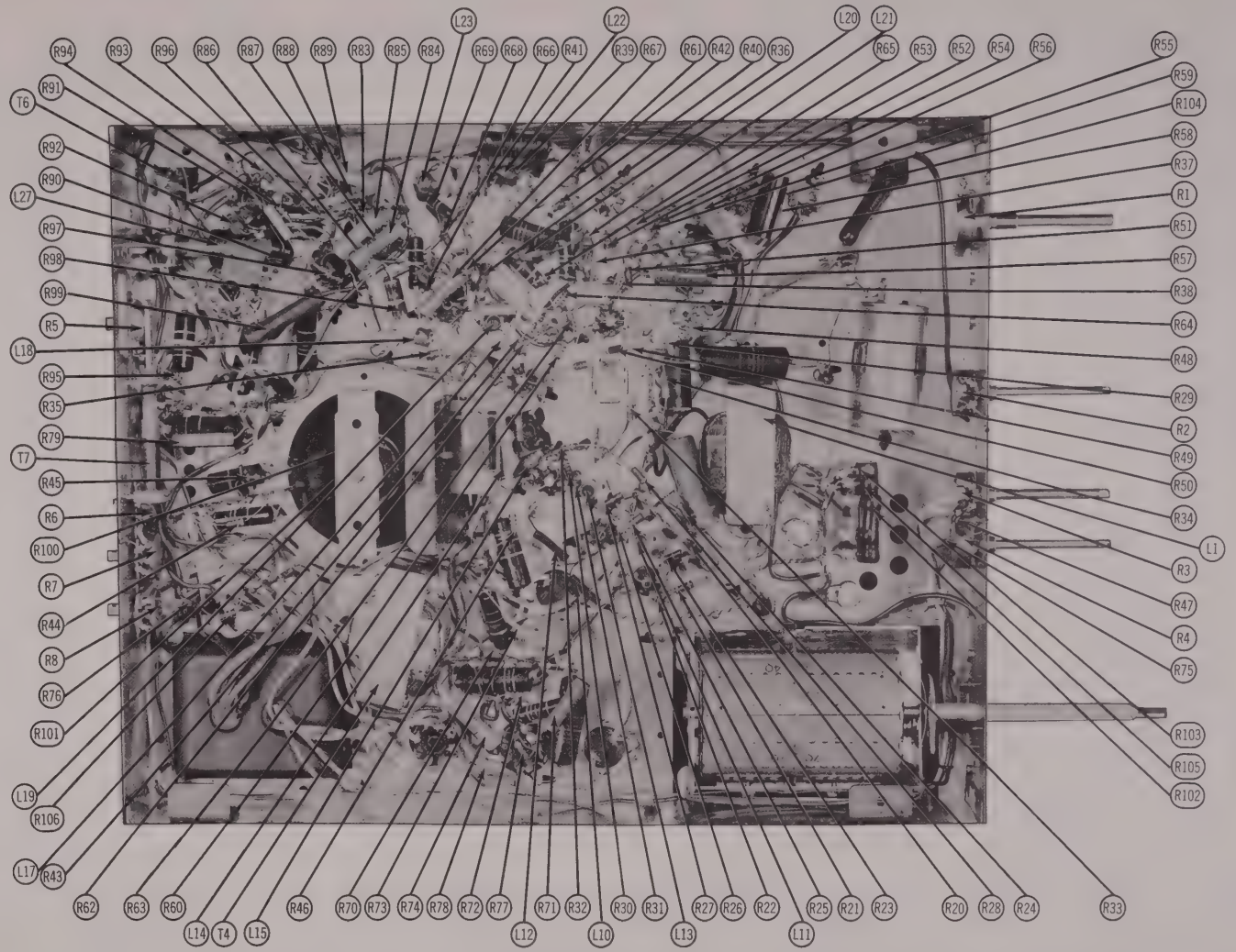
BUZZ

Align ratio detector as outlined in the alignment table. If buzz is still present substitute V13 and realign. Check C8 for leakage.

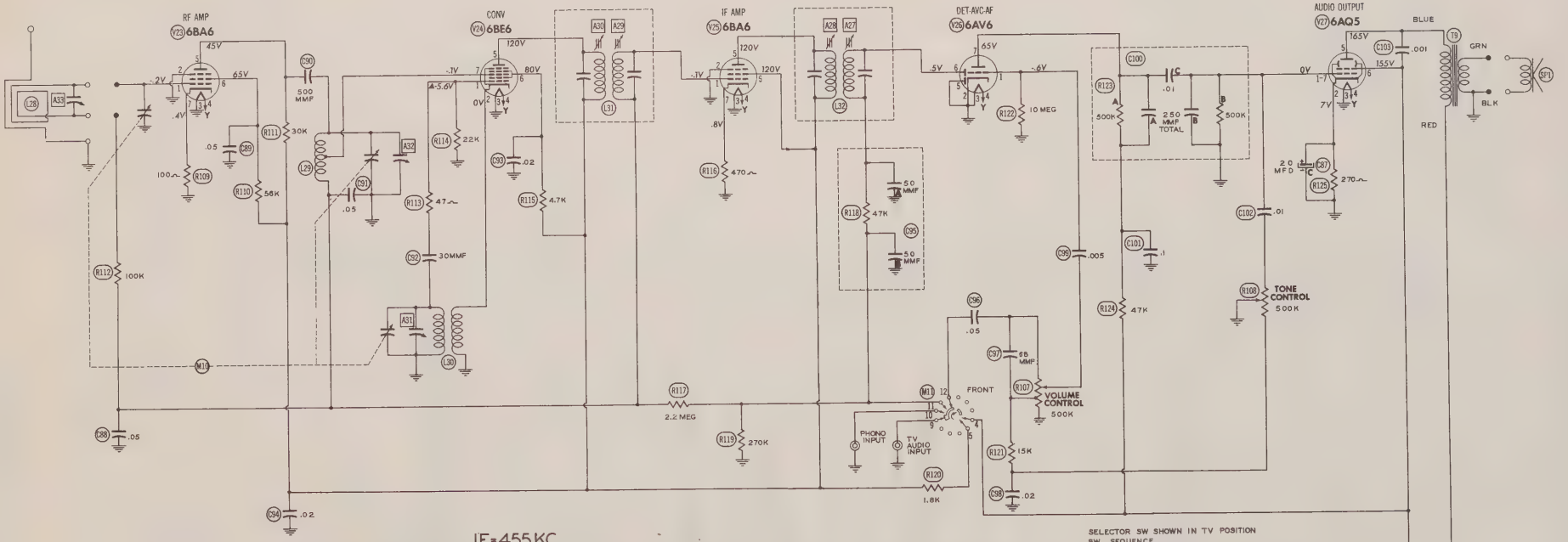
DISTORTED

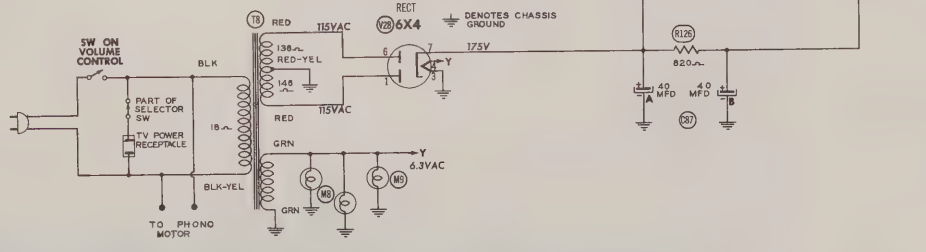
Check audio amplifier and output stages by switching to radio.

If Distorted	If Not Distorted
Check coupling capacitors bypass capacitors, tone compensating networks and other components associated with V26, V27 and V28 .	Check ratio detector alignment audio IF alignment and associated circuit components.



TV CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION





RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 23	6BA6	2.6Meg	0Ω	0Ω	.1Ω	†32KΩ	†58KΩ	100Ω
V 24	6BE6	22KΩ	.6Ω	0Ω	.1Ω	†2.6KΩ	†7.3KΩ	2.5Meg
V 25	6BA6	2.5Meg	0Ω	0Ω	.1Ω	†2.6KΩ	†2.6KΩ	470Ω
V 26	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	320KΩ	†550KΩ
V 27	6AQ6	500KΩ	270Ω	0Ω	.1Ω	†445Ω	†820Ω	500KΩ
V 28	6X4	146Ω	INF	0Ω	.1Ω	INF	136Ω	1 Meg

▲ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 7 OF V28.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

TRUETONE
MODELS 2D1344A, B (Ch. 21M536C)

RADIO SCHEMATIC

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BQ7	6BQ7	9AJ	
B	RF Amplifier	6BZ7	6BZ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector-DC Restorer	6AL5	6AL5	6BT	
V7	Video Amplifier-Sync Phase Inv.	12AT7	12AT7	9A	
V8	Video Output	6AH6	6AH6	7BK	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	AGC Clamper	6AV6	6AV6	7BT	
V11	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V12	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	Sync Separator	6BE6	6BE6	7CH	
V15A	Vert. Oscillator-Vert. Output	6SN7GTA	6SN7GTA	8BD	
B	Vert. Oscillator-Vert. Output	6BL7GT	6BL7GT	8BD	
V16	Horiz. AFC	6AL5	6AL5	6BT	
V17	Horiz. Mult.	6SN7GTA	6SN7GTA	8BD	
V18	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V19	Damper	6W4GT	6W4GT	4CG	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: TRUETONE PART No.	SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V22	21MP4	21MP4		12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲80	400	45X390	AFH3-46		CO37		FP378	R1341	
B	▲60	400								
C2A	▲80	400	45X391	AFH3-142		C109		FP375	TVL-3764	
B	▲100	50								
C3	60	450	45X386	AFH1-54		A050		FP237	TVL-2759	Note 1
C4	30	400	45X393	PRS450/30		BR3045A		TC77	TVA-1711	
C5A	■30	450	45X380	AFH3-137		CO97		FP366	TVL-3751	
B	▲40	50								Note 2
C6	5	25	45X378	PRS150/4		BR550		TC30	TVA-1203	
C7	4	100	45X361	PRS150/4		BR415		TC40	TVA-1402	
C8	5	25	45X378	PRS150/4		BR550		TC30	TVA-1203	
C9	3-9		31B-207		829-10					
C10	800		13D-153	CN-1-001	MFT-1000				503C-D1	
C11	3.6		CD8C3R6C							
C12	800		13D-196	CN-1-001	MFT-1000				503C-D1	
C13	1000		CD8X102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C14	.5-3		31B-206		829-3			CT565A		
C15	47		CD8Q470K	BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C16	1.5		CD8C1R5M	SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C17	47		CD8Q470K	BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C18	.5-3		31B-206		829-3			CT565A		
C19	10		CD10C100K	SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C20	5		CD8U050C	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C21	1000		CD8X102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C22	6.8		CD8C6R8C	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C23	120		13D-055	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C24	800		13D-153	CN-1-001	MFT-1000				503C-D1	
C25	800		13D-153	CN-1-001	MFT-1000				503C-D1	
C26	800		13D-153	CN-1-001	MFT-1000				503C-D1	
C27	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	4TM-P22	
C28A	1000		80X3	BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C29	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C30	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	4TM-P22	
C32A	1000		80X3	BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C33	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C34	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C35	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C36	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C37	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C38	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C39	47		47X603	SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C40	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C41	5		47X562	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C42	360	500	47X568							
C43	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C44	.1	400	RCP10M4104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C45	.047	600	RCP10M6473M	P688-047	DF-503	PTE6S15		PT6147	6TM-S47	
C46	.015	600	RCP10M6153M	P688-015		PTE6S15		TP411	6TM-S15	
C47	.1	200	RCP10M2104M	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C48	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C49	1.5		47X584	SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C50	5000		47X507	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C51	100		47X604	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C52	5000		47X507	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C53	5000		47X507	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C54	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C55	470	500	47X525	1469-0005		SR5T5		MCB245	MB-35	
C56	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP3-333-103	PT411	47M-S1	
C57	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C58	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT1447	47M-S47	
C59A	.002			P488-002		[PTE6D2		PT623		
B	.005		⊕76X7	P488-005	⊕PC-100	PTE6D5	⊕1405-01	PT625	⊕801C1	
C	.005			P488-005		PTE6D5]		PT625	MB-31	
C60	4700	500	47X543	1464-005		1DR5D5				
C61	.0047	400	RCP10M4473M	P488-0047		PTE6D47		PT6247	47M-D47	
C62	100		47X604	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C63	.047	600	RCP10M4733M	P488-047		PTE6S47		PT6147	47M-S47	
C64	.1	600	RCP10M6104M	P488-1	DF-104	PTE6P1		PT601	47M-P1	
C65	.01	600	RCP10M6103M	P488-01	D6-103	PTE6S1	GP3-333-103	PT611	47M-S1	
C66	.1	600	RCP10M6104M	P488-1	DF-104	PTE6P1		PT601	47M-P1	
C67	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C68	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C69	270	500	RCM30A271K	1469-0003		SR5T25		MCB340		
C70	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP3-333-103	PT411	47M-S1	
C71	.0047	400	RCP10M4472M	P488-0047	D6-472	PTE6D47	GP3-333-472	PT6247	47M-D47	
C72	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	47M-P22	
C73	.047	200	RCP10M2473M	P488-047	DF-503	PTE4S47		PT4047	47M-S47	
C74	4700	500	47X543	1464-005		1DR5D5		MCB465	MB-35	
C75	430	500	RCM30D431K							
C76	.1	400	RCP10M4104	P488-1	DF-104	PTE4P1		PT401	47M-P1	
C77	330	500	47X570	1469-00035						
C78	220	500	RCM30A221K	1469-00025		SR5T25		MCB340		
C79	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	47M-S47	
C80	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C81	.1	400	RCP10M4104	P488-1		PTE4P1		PT401	47M-P1	
C82	.047	400	RCP10M4473M	P488-047		PTE4S47		PT4147	47M-S47	
C83	.15	400	RCP10M4154M	P488-15		PTE4P15		TP417	47M-P15	
C84	56	2000	47X598							
C85	500	20000	47X560	HV20C	TV3-502	MMC-20TS	413-501			20DK-T5
C86A	10000		70X8	BPD-22X01	DD-3-103	TM5D81	811-001	DC-511	5HK-281	
B	10000						811-001	DC-511		

Note 1. Some Models use 30MFD in this application.
Note 2. C58 not used.
⊕ Items C59A, C59B, C59C, R70A, R70B, R70C are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1500Ω	½	40X367	Q17-109	AG-11-S	AB-6	U-6	Contrast
B	Shaft		Not Req.	C3	F8-S	AK-22	DS-36	Attach to R1A
R2A	250Ω	½	40X361-C	QH-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	NQ	R8-3/16	AK-4	DS-37	Attach to R2A
R3A	500KΩ	½	B40X333-A	QH-133	AG-58-S	AB-59	U-50	Brightness
B	Shaft		Not Req.	NQ	R8-3/16	AK-4	DS-37	Attach to R3A
R4A	1 Meg	½	B40X334-D	QH-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	NQ	R8-3/16	AK-4	DS-37	Attach to R4A
R5A	150KΩ	½	B40X331-A	QH-228	AG-52-S	AB-46	U-43	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R5A
R6	7.5Meg	½	40X383					Sync. Stability
R7A	4000Ω	½	40X388	QH-114	AG-80-S	AB-9	SU-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R7A
R8A	2.5Meg	½	B40X364	QH-219	AG-84-S	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R8A
R9	2.7Meg							AGC Threshold-Note

Note. Not used in all models.

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R10	15KΩ	½	12A-004	BTS-15K	
R11	47KΩ	½	12A-039	BTS-47K	
R12	100KΩ	½	12A-094		
R13	160KΩ-5%	½	12A-167	BTS-160K-5%	
R14	150Ω	½	12A-163	BTS-150	
R15	100KΩ-5%	½	12A-166	BTS-100K-5%	
R16	10KΩ	½	12A-040	BTS-10K	
R17	330KΩ	½	12A-041		
R18	10KΩ	½	12A-040	BTS-10K	
R19	10KΩ	½	12A-040	BTS-10K	
R20	8200Ω	½	B85102	BTS-1000	
R21	8200Ω	½	B83823		
R22	47Ω	½	B83470	BTS-47	
R23	1000Ω	½	B85102	BTS-1000	
R24	150Ω	½	B85151	BTS-150	
R25	22KΩ	½	B85223		
R26	470Ω	½	B83470	BTS-47	
R27	1000Ω	½	B85102	BTS-1000	
R28	150Ω	½	B85151	BTS-150	
R29	3.9Meg	½	B83395	BTS-3.9Meg	Note 1
R30	22KΩ	½	B83223		
R31	180Ω	½	B84181	BTS-180	
R32	1500Ω	½	B84152	BTS-1500	
R33	100K Ω	½	B84104	BTS-100K	
R34	330KΩ-5%	½	B83334	BTS-330K-5%	
R35	4700Ω-5%	½	B83472	BTS-4700-5%	
R36	5600Ω	1	C84562	BTA-5600	
R37	1500Ω	½	B84152	BTS-1500	
R38	33KΩ	½	B84333	BTS-33K	
R39	1 Meg	½	B84105	BTS-1 Meg	
R40	100Ω	½	B84101	BTS-100	
R41	4700Ω-5%	1	C83473	BTA-4700-5%	Note 3
R42	100KΩ	½	B85104	BTS-100K	Note 4
R43	1 Meg	½	B84105	BTS-1 Meg	Note 2
R44	22KΩ	½	B84223	BTS-22K	
R45	100KΩ	½	B85104	BTS-100K	
R46	2200Ω	½	B83222	BTS-2200	
R47	47KΩ	½	B85473	BTS-47K	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R48	47KΩ	½	B85473	BTS-47K	
R49	470KΩ	½	B84474	BTS-470K	
R50	100 Ω	½	B84101	BTS-100	
R51	1000Ω	½	B85102	BTS-1000	
R52	56KΩ	½	B84563		
R53	100KΩ	½	B84104	BTS-100K	
R54	1000Ω	½	B85102	BTS-1000	
R55	33KΩ	½	B84333	BTS-33K	
R56	270Ω	½	B84271	BTS-270	
R57	68KΩ	½	B84683	BTS-68K	
R58	22KΩ	½	B84223	BTS-22K	
R59	22KΩ	½	B84233	BTS-22K	
R60	47KΩ	½	B84473	BTS-47K	
R61	10KΩ-5%	½	B84103	BTS-10K-5%	
R62	270KΩ	½	B84274	BTS-270K	
R63	1.5Meg	½	B84155	BTS-1.5Meg	
R64	68KΩ	½	B84683	BTS-68K	
R65	820KΩ	½	B84824	BTS-820K	
R66	2200Ω-5%	½	B83222	BTS-2200-5%	
R67	3300Ω	½	B84322	BTS-3300	
R68	2200Ω-5%	½	B83222	BTS-2200-5%	
R69	1000Ω	1	C84102	BTA-1000	
R70A	22KΩ	½		BTS-22K	
B	8200Ω	½	⊕76X7	BTS-8200	
C	8200Ω	½		BTS-8200	
R71	470KΩ	½	B85474	BTS-470K	
R72	1.8Meg	½	B84185	BTS-1.8Meg	Note 5
R73	1.2Meg	½	B84125	BTS-1.2Meg	
R74	10KΩ	½	B84103	BTS-10K	
R75	180KΩ	½	B84184	BTS-180K	
R76	2.2Meg	½	B84225	BTS-2.2Meg	
R77	2.2Meg	½	B84225	BTS-2.2Meg	Note 3
R78	820Ω	½	B84821	BTS-820	Note 4
R79	6800Ω	2	D86582	BTB-6800	Note 2
R80	560Ω	½	B84561	BTS-560	
R81	560Ω	½	B84561	BTS-560	
R82	1000Ω	½	B85102	BTS-1000	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R83	27KΩ	½	B84273	BTS-27K	
R84	6800Ω	½	B84682	BTS-6800	
R85	6800Ω	½	B84682	BTS-6800	
R86	100KΩ	½	B84104	BTS-100K	
R87	100KΩ	½	B84104	BTS-100K	
R88	4.7Meg	½	B85475	BTS-4.7Meg	
R89	470KΩ	½	B85474	BTS-470K	
R90	33KΩ	½	B84333	BTS-33K	
R91	2200Ω	½	B83222	BTS-2200	
R92	56000Ω	1	C83562	BTA-5600	
R93	150KΩ-5%	½	B83154	BTS-150K-5%	
R94	220KΩ-5%	½	B83224	BTS-220K-5%	
R95	47KΩ	½	B84473	BTS-47K	

Note 1. Model No. 2D1344A uses a 2.5Meg resistor in this application.
Note 2. Model No. 2D1344A uses a 3300Ω resistor in this application.
Note 3. Model No. 2D1344A uses a 1 Meg resistor in this application.
Note 4. Model No. 2D1344A uses a 1500Ω resistor in this application.
Note 5. Some models may use a 1.5Meg resistor in this application.
Note 6. Not used in all models.
⊕ Items R70A, R70B, R70C, C59A, C59B, C59C are combined in one unit.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R96	5600Ω	½	B84562	BTS-5600	
R97	470KΩ	½	B84473	BTS-470K	
R98	100Ω	2	D84101	BW-2-100	
R99	13KΩ	5	43X276	1 3/4A-12K	
R100	5.1Ω	½	43X239		
R101	1 Meg	1	C85105		
R102	10KΩ	5	43X273	1 3/4A-10K	
R103	2000Ω	15	43X277	2D-3000	
R104	7.5KΩ	10	43X274	1 3/4A-7500	
R105	3300	10	43X272	1 3/4A-350	
R106	270KΩ	½	B85274	BTS-270K	
R137	100KΩ	½		BTS-100K	Note 6

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC	620VCT	5VAC	6.3VAC	53X324	P-8165 ①				
	① 1A	.230ADC	② 3A	③ 1.2A						
				SEC. 4						
				6.3VAC						
				④ 7.8A						

① Tape up lower high voltage tap

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T2	190Ω	110Ω	54X8	A-8125	A-3003	TSO-5	A-97X	209T2 ⑧	Vert. Osc. Trans.
T3	469Ω	3.5Ω							
	tap ②	SEC. 2	83X330						Horiz. Output Trans.
	.5Ω, TO, 14Ω, 23Ω,	6Ω							
	39Ω								
T4	1500Ω		51X156	A-8123 ①	A-3037 ①	TSO-8 ① ⑨	A-102X ①	222T1 ①	Vert. Output Trans.
	tap ③								
	4.4Ω								
T5A	23Ω		9A2274	DY-9A ⑤	MDF-70 ⑤	TY-3 ⑦	Y-17	21ID2	Horiz. Deflection Coils
B	47Ω								Vert. Deflection Coils
T6	15Ω		9A2262			WC-12 ⑥	215R1		Horiz. Linearity Coil
T7	.8Ω		9A2183	WC- 4 ⑤	MWC-2 ⑤ ⑩	TW-2 ⑤	20R4 ⑤		Width Coil

① Drill one new mounting hole.
② Connect as auto trans.
③ Use original horiz. deflection coil network if necessary.
④ Connect to coded blue and red terminals.
⑤ Enlarge mounting hole.
⑥ Bend clip (thread section) or use slider and core
⑦ Use original deflection coil network
⑧ Mount on top of chassis.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ^\)	REPLACEMENT DATA TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.250ADC	51Ω	1.98 Hy.	52X90	C-2326	C-2091	TR-1733 ①	C-17X

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA TRUETONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L2A	Ant. Coil	0Ω CT	0Ω	9A2278-1				Channel 2
B	Ant. Coil	0Ω CT	0Ω	9A2278-2				Channel 3
C	Ant. Coil	0Ω CT	0Ω	9A2278-3				Channel 4
D	Ant. Coil	0Ω CT	0Ω	9A2278-4				Channel 5
E	Ant. Coil	0Ω CT	0Ω	9A2278-5				Channel 6
F	Ant. Coil	0Ω CT	0Ω	9A2278-6				Channel 7
G	Ant. Coil	0Ω CT	0Ω	9A2278-7				Channel 8
H	Ant. Coil	0Ω CT	0Ω	9A2278-8				Channel 9
I	Ant. Coil	0Ω CT	0Ω	9A2278-9				Channel 10
J	Ant. Coil	0Ω CT	0Ω	9A2278-10				Channel 11
K	Ant. Coil	0Ω CT	0Ω	9A2278-11				Channel 12
L	Ant. Coil	0Ω CT	0Ω	9A2278-12				Channel 13
L3	Fil. Choke	0Ω		34A-346				
L4	Neutr. Coil	0Ω		31B-296				
L5A	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-1				Channel 2
B	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-2				Channel 3
C	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-3				Channel 4
D	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-4				Channel 5

COILS (CONT.)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA TRUETONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
E	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-5				Channel 6
F	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-6				Channel 7
G	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-7				Channel 8
H	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-8				Channel 9
I	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-9				Channel 10
J	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-10				Channel 11
K	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-11				Channel 12
L	RF, Mixer Grid & Osc. Coil	0Ω		9A2279-12				Channel 13
L6	Fil. Choke	0Ω		34A575				
L7	RF Choke	0Ω		31B-295				
L8	1st. Video IF	1Ω		31A-078				
L9	RF Choke	1.2Ω		31B-239				
L10	Fil. Choke	0Ω		9A2033	19-3001	TV-189	4602	1 Microhenry
L11	2nd. Video IF	.2Ω	.2Ω	9A2230	17-1063			
L12	Fil. Choke	0Ω		9A2033	19-3001	TV-189	4602	1 Microhenry
L13	3rd. Video IF	.2Ω	.2Ω	9A2230	17-1064			
L14	Fil. Choke	0Ω		9A2033	19-3001	TV-189	4602	1 Microhenry
L15	RF Choke	2.8Ω		9A1979	19-3036	TV-180	4628	36 Microhenries
L16	4th. Video IF	.2Ω		9A2226		TV-101	6187	Includes trap
L17	Series Peaking Coil	11.5Ω		36A10	19-4060	TV-180 †	6172 †	60 Microhenries, wound on 22KΩ resistor
L18	Shunt Peaking Coil	28Ω		36A11	19-3500	TV-188	6174	500 Microhenries
L19	4.5MC Trap	.3Ω		9A2074	20-1004††	TV-151	4170	
L20	Series Peaking Coil	2.8Ω		9A1979	19-3036	TV-180	6176	36 Microhenries
L21	Shunt Peaking Coil	9Ω		36A18	19-3075 *	TV-181 *	6172 *	80 Microhenries, wound on 1.5KΩ resistor
L22	Series Peaking Coil	13Ω		36A12	19-4160	TV-184 †	4644 †	160 Microhenries, wound on 22KΩ resistor
L23	Shunt Peaking Coil	14Ω		36A2	19-3180	TV-184	6180	190 Microhenries
L24	1st. Sound IF	3Ω		9A2168	17-1031 †	TV-113 =	1470A **	
L25	2nd. Sound IF	1.6Ω	1.8Ω	9A2170		TV-113	6203	
L26	Ratio Det.	2.6Ω	.6Ω CT	9A2269	17-1033	TV-110	1468	Tertiary Winding ~1Ω
L27	Horiz. Osc.	55Ω		9A2098	19-1576	TV-163	6210	

* Parallel with 1.5KΩ resistor
‡ Parallel with 22KΩ resistor
† Drill mounting holes.
= Detune unused section
** Add 47 MMF capacitor externally.
†† Remove original coil with 360MMF capacitor and use Meissner replacement with 47MMF capacitor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA TRUETONE PART No. FUSE	TRUETONE PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG Slo-Blo	4/10A ⑥ 125 V	16X147-5	16X146	313.400 (3AG-4/10A-Slo-Blo)	357001	MDL-4/10	4405

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M2	Pilot Bulb	7A32	Type #51
M3	RF Tuner	25A1005	
M4	Centering Magnet	2A426	
M5	Ion Trap	2A407	
	Cabinet	256	
	Back Assembly	S-14X67	
	Escutcheon	S-4X20	Control Panel,
	Safety Glass	17X174	
	Mask	4X1200	
	Knob	10A820-1	Fine Tuning, Both Models.
	Knob	10A821-2	Contrast,
	Knob	10A812-2	Contrast,
	Knob	10A812	Channel Selector,

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V23	RF Amplifier	6BA6	6BA6	7BK	
V24	Converter	6BE6	6BE6	7CH	
V25	IF Amplifier	6BA6	6BA6	7BK	
V26	Det.-AVC-AF Amp	6AV6	6AV6	7BT	
V27	Audio Output	6AQ5	6AQ5	7BZ	
V28	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C87A	■40	200	45X381	AFH2-29		B024		FP221	TVL-2460	
B	▲40	150		PRS25/25		BR202A		TC26	TVA-1205	
C	20	25								
C88	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C89	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C90	500		47X508	SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C91	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C92	30		47X558		TCN-30		N750K-300			
C93	.02	200	B66203	P488-02	DD-203	PJ2S 2		PT412	2TM-S2	
C94	.02	200	B66203	P488-02	DD-203	PJ2S 2		PT412	2TM-S2	
C95A	50		*76X1	SI50	*PC-52	TM5Q5	*1403-03	UC-545	*100C3	
B	50			SI50		TM5Q5		UC-545		
C96	.05	200	B66503	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C97	68	500	47X471	SI68	D6-680	5W5Q7	GP1K-680	UC-5468	5GA-Q68	
C98	.02	200	B66203	P488-02	DD-203	PJ2S2		PT412	2TM-S2	
C99	.005	400	D66502	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C100A	250		†76X5		†PC-80		†1404-01		†102C1	
B										
C	.01									
C101	.1	200	B66104	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C102	.01	200	B66103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C103	.001	600	F66102	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	

* Items C95A, C95B, R118 are combined in one unit.
† Items C100A, C100B, C100C, R123A, R123B are combined in one unit.
When replacing items separately C100A and C100B should total 250MMF.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R107A	500KΩ	½	36X372B	Q13-133X	AT-78	BTSK-66-S	UT-427	Volume Tap ⓐ 100KΩ
B	Shaft		Not Req.	KSS-3	Not Req.	Not Req.	Not Req.	Attach to R107A
C	Switch		Not Req.	76-1	SW-A	Not Req.	US-26	Attach to R107A
R108A	500KΩ	½	40X310	Q13-133	AG-60-Z	BSK-60	U-48	Tone
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R108A

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R109	100Ω	½	B84101	BTS-100	
R110	56KΩ	½	B84563	BTS-56K	
R111	30KΩ	½	B84303		
R112	100KΩ	½	B85104	BTS-100K	
R113	47Ω	½	B85470	BTS-47	
R114	22KΩ	½	B85223	BTS-22K	
R115	4700Ω	½	B84473	BTS-4700	
R116	470Ω	½	B84471	BTS-470	
R117	2.2Meg	½	B85225	BTS-2.2Meg	
R118	47KΩ	½	*76X1	BTS-47K	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R119	270KΩ	½	B84274	BTS-270K	
R120	1800Ω	1	C85182	BTA-1800	
R121	15KΩ	½	B84153	BTS-15K	
R122	10Meg	½	B85106	BTS-10Meg	
R123A	500KΩ	½	† 76X5		
B	500KΩ	½			
R124	47KΩ	½	B85473	BTS-47K	
R125	270Ω	½	B84271	BTS-270	
R126	820Ω	2	D84821	BTB-820	

* Items R118, C95A, C95B, are combined in one unit.
† Items R123A, R123B, C100A, C100B, C100C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T8	117VAC ⓐ .27A	330VCT .044ADC	6.3VAC ⓐ 2.64A		53X291G					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T9	7KΩ	3.7Ω	444Ω	.78Ω	51X134	A-3878①	A-3020	RO-13 ①	S-7X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	8"	PM	3.7Ω	C-12A477	ST-115 Mod. P8-V	8A31	

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	TRUETONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L28	Loop Ant.	.1Ω	1.4Ω	9A2114				Tapped @ 3.2Ω
L29	RF Coil	9Ω		9A2283				
L30	Osc. Coil	.6Ω	7.3Ω	9A2113	14-1073		71-Osc.	
L31	Input IF	12Ω	12.5Ω	9A2112	16-6758	BC-352	12-C1	
L32	Output IF	12Ω	14Ω	9A2063	16-6758	BC-353	12-C2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	TRUETONE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M6	10L3-J	10L3-J	A-78-J A-33-J			96-S	S-1 S-3	

ASTATIC, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

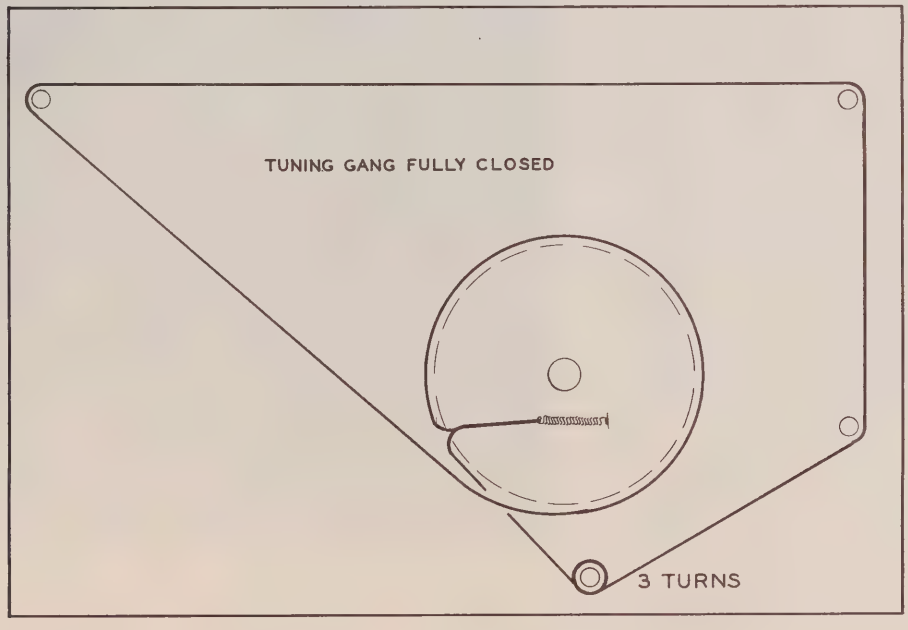
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	TRUETONE PART No.	WALCO PART No.	JENSEN PART No.	
M7	A1—J	W-5MGA or W-5MGS	A-75LP or A-85LP	1 Mil
	A3—J	W-5A or W-5S	A-75 or A-85	3 Mil

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M8	Pilot Bulb	7A103	Type #47 (2 Used)
M9	Pilot Bulb	7A32	Type #51 (Jewel Light)
M10	Tuning Capacitor	14A213	24-472MMF, 14-240MMF, 13-115MMF
M11	Switch	2A403	Function Selector
A33	Trimmer Capacitor	17A235	Antenna Loop, 2-24MMF
	Escutcheon	4X1162	
	Glass (Dial)	58X764	
	Pointer	15X251	
	Knob	10A759	Off/On Volume, Tuning, Tone & Function Selector (4 Used)



DIAL CORD DRIVE

TROUBLE SHOOTING AIDS (CONT.)

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Substitute V17, V18, V19 and V20. Check waveform at W17.

If Satisfactory	If Unsatisfactory
Check R100, R101, C85, C81, C82, T3, C79, C80 and other associated components.	Check C76, C77, C78 and other components associated with V17.

INSUFFICIENT HIGH VOLTAGE

Substitute V17, V18, V19, V20 and V21. Proceed as outlined under "LOSS OF HIGH VOLTAGE".

BLOOMING

Substitute V18, V19, V20 and V21. Check R100, R101, C85, T3 and other associated components.

POWER

SMALL AND/OR DIM RASTER

Substitute V21. Measure B+.

If Low	If Satisfactory
Check B+ filter capacitors, choke and filter resistors. Check outputs for shorts.	Proceed as outlined under "INSUFFICIENT HIGH VOLTAGE."

DIM PICTURE, WEAK SOUND

Substitute V21. Check B+ filter capacitors and decoupling networks.

GENERAL

RASTER, NO SOUND, NO PICTURE

Substitute V1, V2, V3, V4, V5, V6 and V 7. Check video IF and tuner coupling network and components.

SNOWY PICTURE WEAK SOUND

Substitute V1, V2, V3, V4 and V5. Check associated components. (This condition will be condition will be more noticeable in weak signal areas).

RASTER, SOUND, NO PICTURE

See LOSS OF VIDEO.

INTERMITTANT STREAKS

Check high voltage section for corona discharge and arcing.

TOTAL LOSS OF SYNC

Substitute V7 and V14. Check C56 and other associated components.

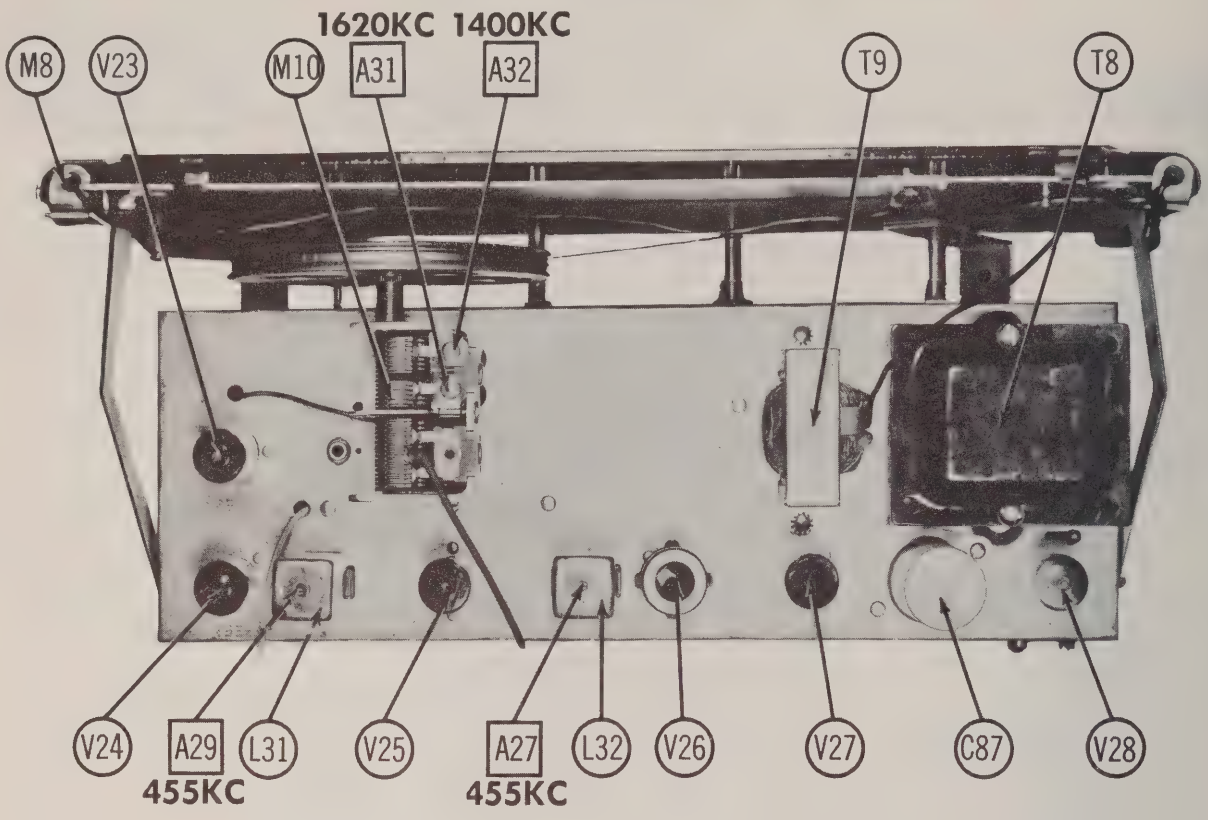
POOR FOCUS

Substitute V21. Check B+ applied to focus anode of picture tube. If satisfactory, check picture tube.

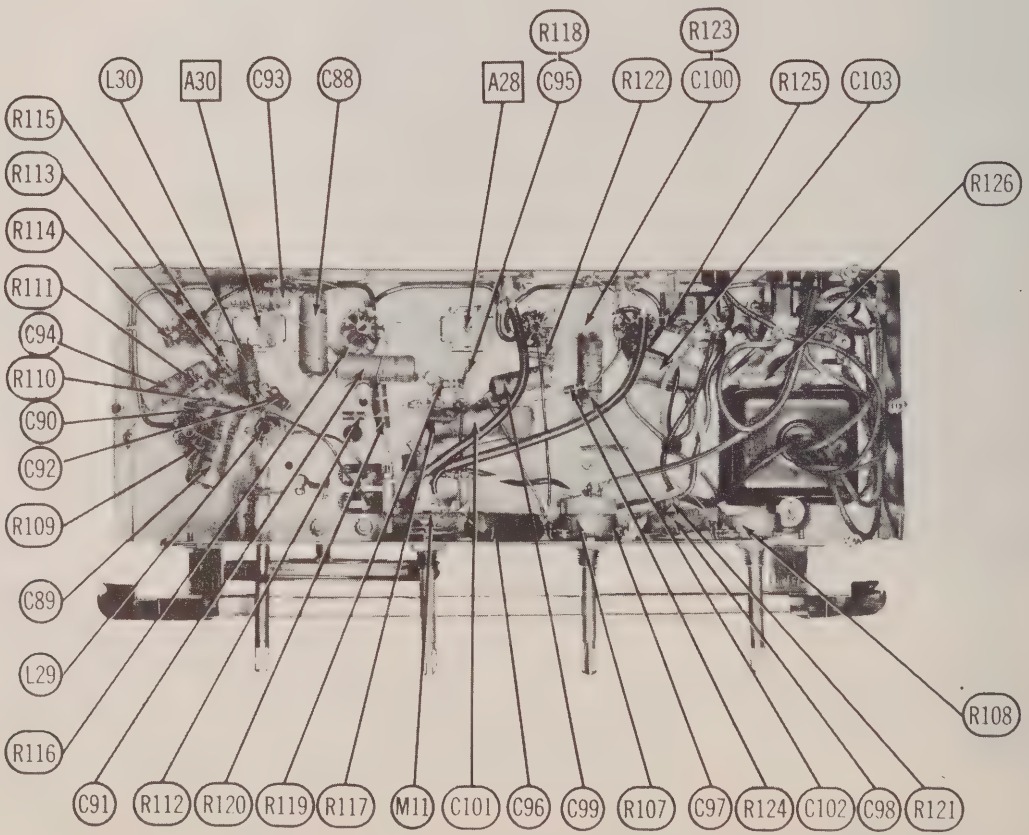
SET DEAD

Check fuse M1. Check AC interlock assembly. Check T1.

Symptoms shown above are assumed and are not indicative of the quality and workmanship of this receiving equipment.



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW

SERVICING IN THE FIELD

UNIVERSITY OF
DENVER, COLORADO

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

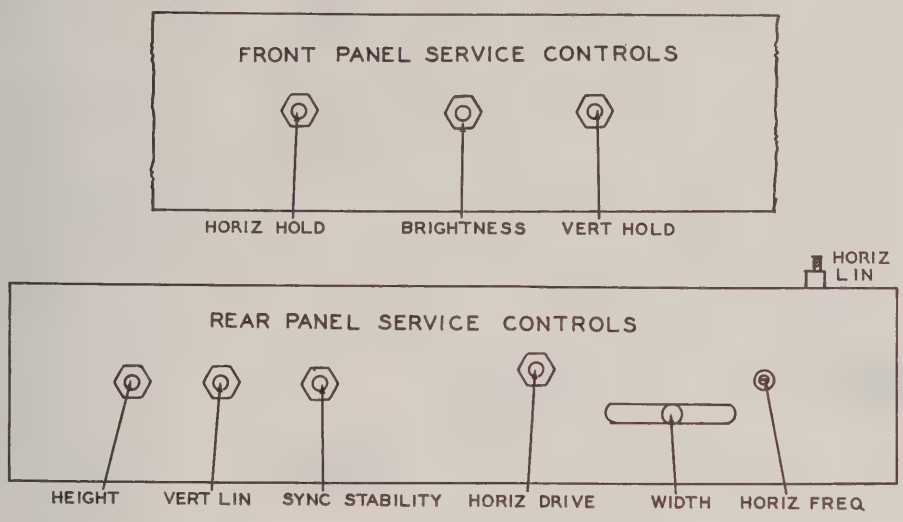
PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 wood screws at top of safety glass. Hold safety glass and remove wood strip. Lift out safety glass. (Use extreme caution when removing safety glass.)

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS - Sync Stability

Adjust for most stable sync on majority of channels received.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency slug (L27) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF detector buzz, adjust the ratio detector secondary (L26) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for LV Power Supply protection (For location, see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting a magnetic ring around the neck of the picture tube located flush against the yoke. Turn the disk-like knob and at the same time rotate the ring around the tube until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

TV DISASSEMBLY

1. Remove 4 push on type control knobs from front panel.
2. Remove 2 wood and 2 metal screws. Remove rear cover.
3. Disconnect built-in antenna. Remove 2 wood screws. Remove antenna bracket.
4. Disconnect TV audio cable, TV AC line, phono audio cable, phono AC lines, and speaker lines.
5. Remove Jewel light.
6. Remove 5 chassis bolts. Remove chassis.

RADIO DISASSEMBLY

1. Re move 4 push on type control knobs from front panel.
2. Disconnect AM loop antenna leads.
3. Remove 3 chassis bolts. Remove chassis.
4. Remove 4 speaker nuts. Remove speaker.

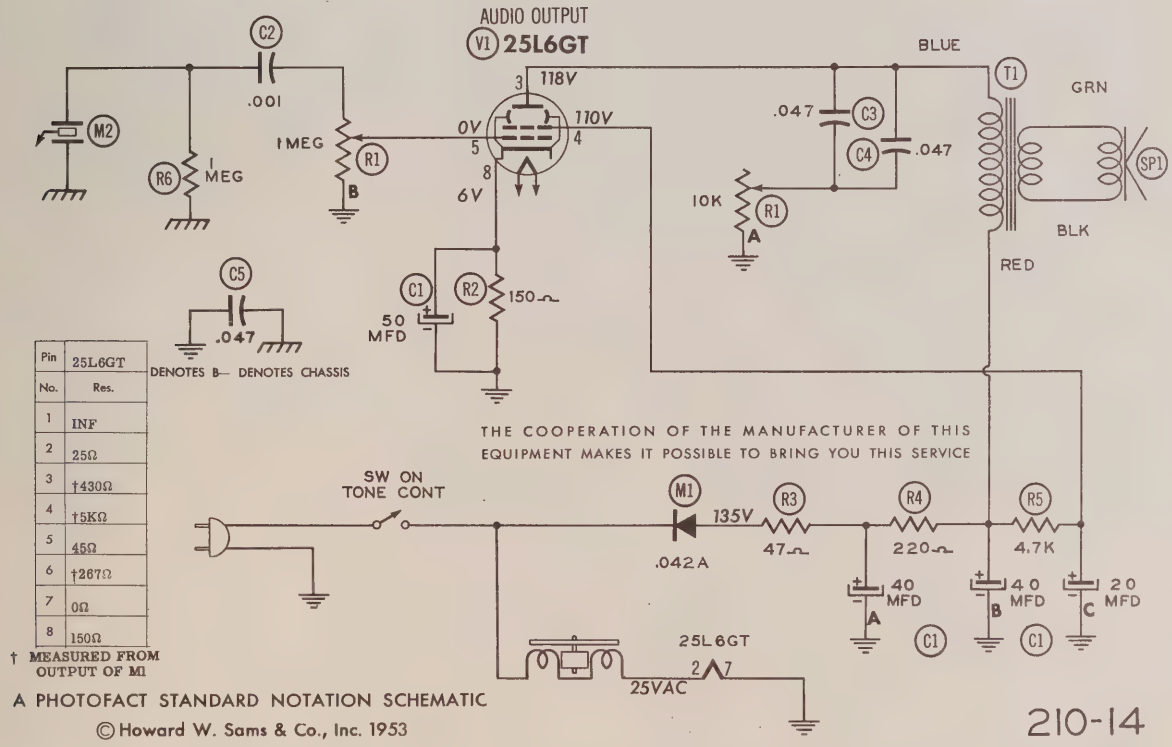
WEBCOR
MODEL B-135-1

PROPERTY OF
L. T. BLANKENSHIP
DE ST.
DENVER, COLORADO

WEBCOR
MODEL B-135-1

WEBCOR
MODEL B-135-1

TRADE NAME	Webcor Model B-135-1
MANUFACTURER	Webster-Chicago, 5610 Bloomindale Ave., Chicago 39, Ill.
TYPE SET	AC Operated Phono Audio Amplifier With 3 Speed Manual Record Player
TUBES (One)	Types 25L6GT Audio Amplifier
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING .36 Amp. @ 117 Volts AC



Pin No.	25L6GT Res.
1	INF
2	25Ω
3	†430Ω
4	†5KΩ
5	45Ω
6	†267Ω
7	0Ω
8	150Ω

† MEASURED FROM OUTPUT OF M1

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

210-14

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS (Continued)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WEBCOR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Audio Output	25L6GT	25L6GT	7S	

CAPACITORS

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: WEBCOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTE
C1A	40	150				BBRQ44315C			R1350	Red
B	40	150								Yellow
C	20	150								Green
D	50	25								Blue
C2	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C3	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C4	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C5	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WEBCOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	10KΩ	1/2	31P079	QJ-456R*		SBB-734-S	UF14L	Tone -Panel
B	1 Meg	1/2					UR16A	Volume-Rear
C	Switch	1/2					US-26	Attach to R1B

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B13-116 & P1-024 (Panel) B13-137 & R2-110 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: WEBCOR PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	150Ω	1/2		BTS-150	
R3	47Ω	1/2			
R4	220Ω	1/2		BTS-220	
R5	4700Ω	1/2		BTS-4700	
R6	1 Meg	1/2		BTS-1 Meg	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: WEBCOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2KΩ	3.2Ω	165Ω	.6Ω	79PQ31	A-3876	A-2928	RO-2	S-2X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: WEBCOR PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3.2Ω	76P026	ST-113 Mod. P4-X	4A07	

SELENIUM RECTIFIER

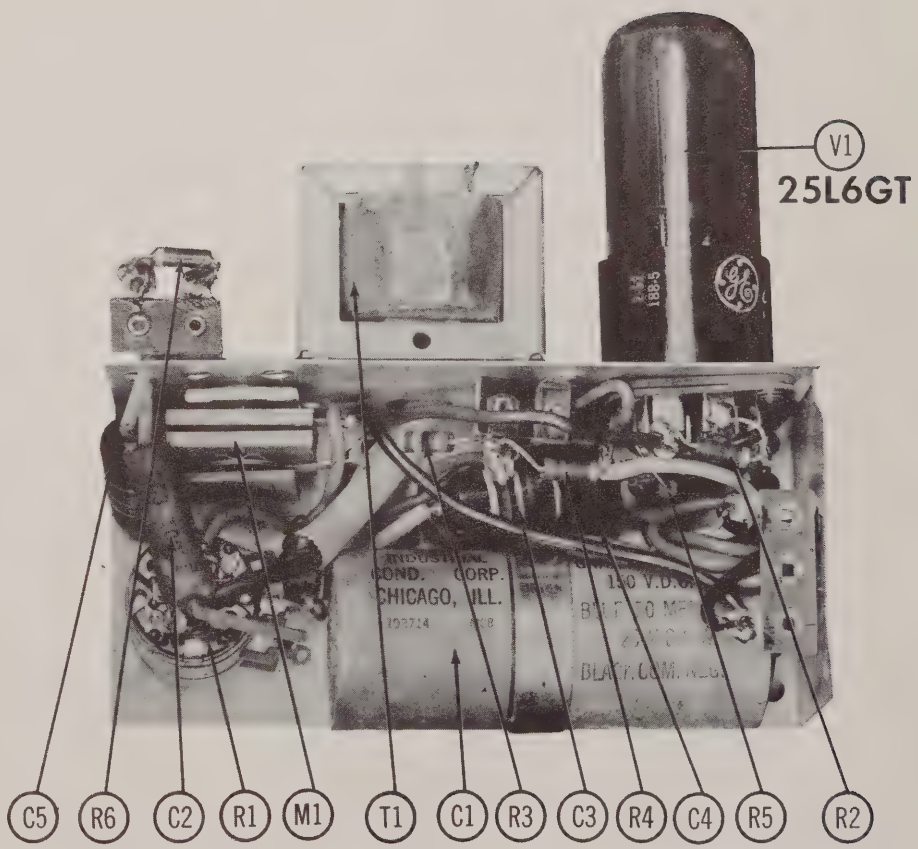
ITEM No.	RATING: CURRENT	REPLACEMENT DATA: WEBCOR PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.042ADC		NA5	8J1	1002A	6S65	65

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA: WEBCOR PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M2		15L3-DM	"R" & R-33			660T	0-1 & 0-3	

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

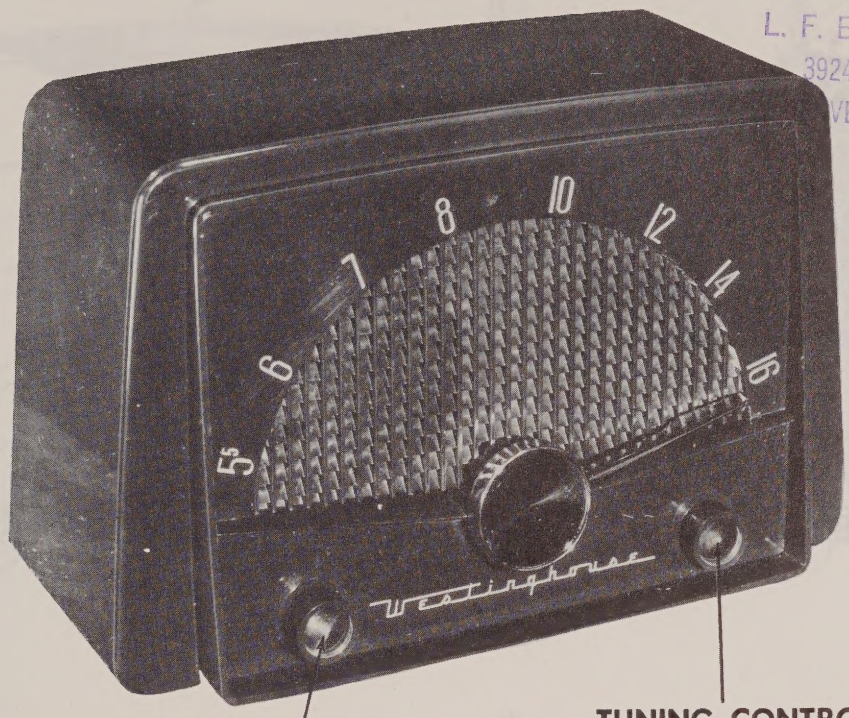
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA: WEBCOR PART No.	WALCO PART No.	JENSEN PART No.	REMARKS
M3		W-25MGA and W-25A	A-70LP and A-70	

WESTINGHOUSE
MODEL H-393T6 (Ch. V-2181-2)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
VER, COLORADO

WESTINGHOUSE
MODEL H-393T6 (Ch. V-2181-2)



TUNING CONTROL

VOLUME CONTROL
ON-OFF SWITCH

WESTINGHOUSE
MODEL H-393T6 (Ch. V-2181-2)

TRADE NAME	Westinghouse Model H-393T6 (Ch. V-2181-2)
MANUFACTURER	Westinghouse Electric Corp., TV-Radio Div., Sunbury, Pa.
TYPE SET	AC-DC Operated AM Superhterodyne Receiver
TUBES (Six)	Types 12BA6 RF Amp., 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 35C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC/DC — RATING .27 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to pin 7 (grid) of 12BE6 (V2) Low side to B-.	455KC (400~Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust in order given for maximum output.
2.	"	High side to stator of antenna tuning capacitor	1615KC	"	"	A5	Adjust for maximum output.
3.	"	"	1400KC	1400KC	"	A6	"
4.		Loop	"	"	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

WESTINGHOUSE
MODEL H-393T6 (Ch. V-2182-2)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		Westinghouse PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	12BA6	12BA6	7BK	
V4	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V5	Audio Output	35C5	35C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTE
	CAP.	VOLT	Westinghouse PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■50	150	V-10190	AFH2-16		BO16		FP214	TVL-2435	
B	▲50	150								
C2	.05	200	V-11728-1	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	.01	400	RCP10W4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C4A	220									
B	.002									
C	.005		♦V-10789-1		♦PC-150		♦1408-01		♦103C4	
D	250									
E										
C5	.01	400	RCP10W4103M	P488-01	DF-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C6	.047	400	V-10157-4473M	489ZX-05		PJ4S47		PT4147	4TM-S47	
C7	.05	200	V-11728-1	P288-05		PJ2S5		PT415	4TM-S5	

♦ Items C4A, C4B, C4C, C4D, C4E, R8A, R8B, R8C are combined in one unit.
When replacing items separately, C4D and C4E should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	Westinghouse PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	V-9993-4	Q19-133X	AK-82	BTSK-67-S	UT-431	Volume-Tapped ⓐ 200KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Westinghouse PART No.	IRC PART No.	
R2	330Ω	½	RC20AE331K	BTS-330	
R3	10KΩ	½	RC20AE103M	BTS-10K	
R4	22KΩ	½	RC20AE223M	BTS-22K	
R5	68Ω	½	RC20AE680M	BTS-68	
R6	3.3Meg	½	RC20AE335M	BTS-3.3Meg	
R7	47KΩ	½	RC20AE473M	BTS-47K	

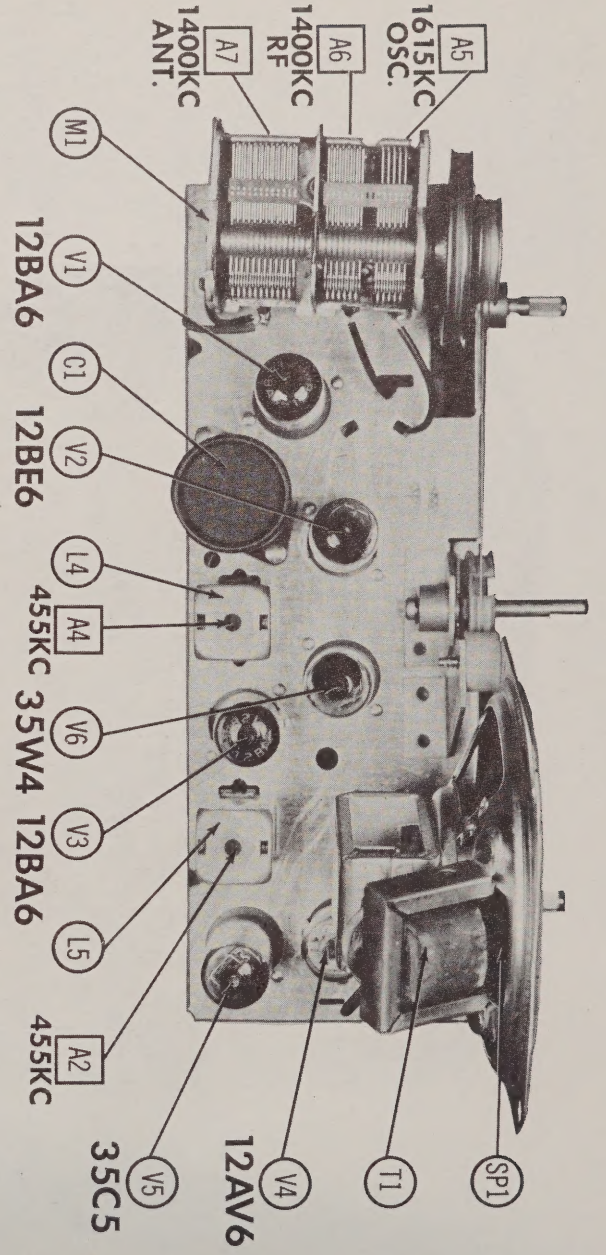
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Westinghouse PART No.	IRC PART No.	
R8A	6.8Meg	½	♦V-10789-1	BTS-6.8Meg	
B	470KΩ	½		BTS-470K	
C	470KΩ	½		BTS-470K	
R9	150Ω	½	RC20AE151M	BTS-150	
R10	1000Ω	1	RC30AE102M	BTA-1000	
R11	22Ω	1	RC30AE220M		
R12	22KΩ	½	RC20AE223M	BTS-22K	

♦ Items R8A, R8B, R8C, C4A, C4B, C4C, C4D, C4E are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Westinghouse PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2KΩ	3.3Ω	204Ω tap ⓐ 9.8Ω	.85Ω	Part of Spkr.		A-3031 ①	RO-3 ①		① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

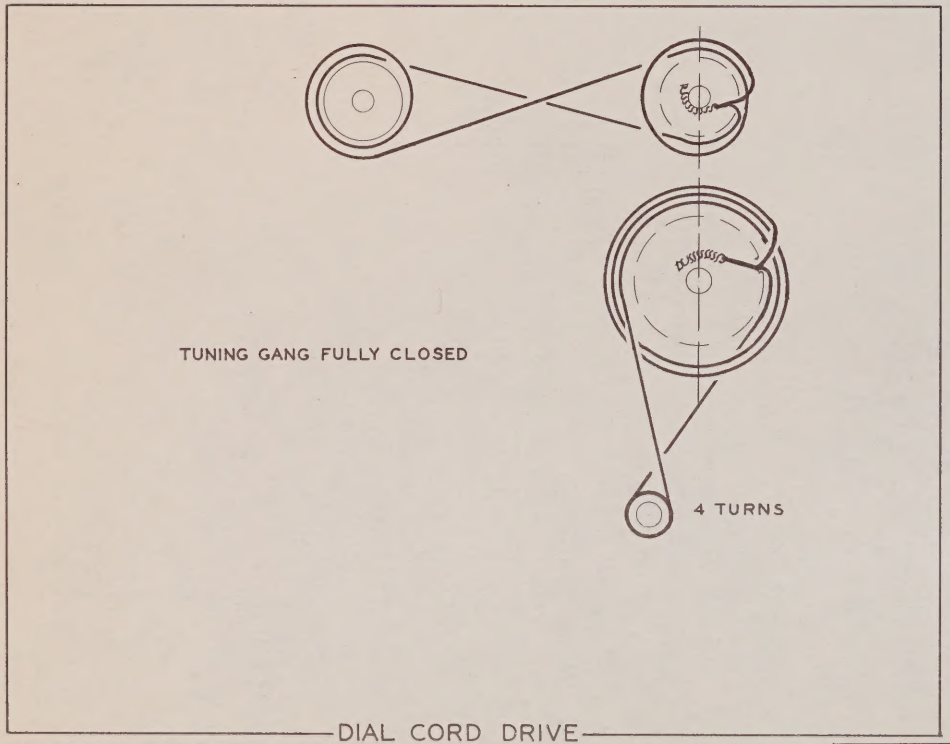
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	Westinghouse PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	V-10079-2	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Westinghouse PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3.6Ω		V-10197-1				
L2	RF Coil	3Ω	10.5Ω	V-10891				Sec.tapped @ 6Ω
L3	Osc.Coil	.9Ω	10.5Ω	V-10192				
L4	Input IF	16Ω	16Ω	V-10945-1	16-6758	BC-352	12-C1	
L5	Output IF	16Ω	16Ω	V-10945-1	16-6758	BC-353	12-C2	

MISCELLANEOUS

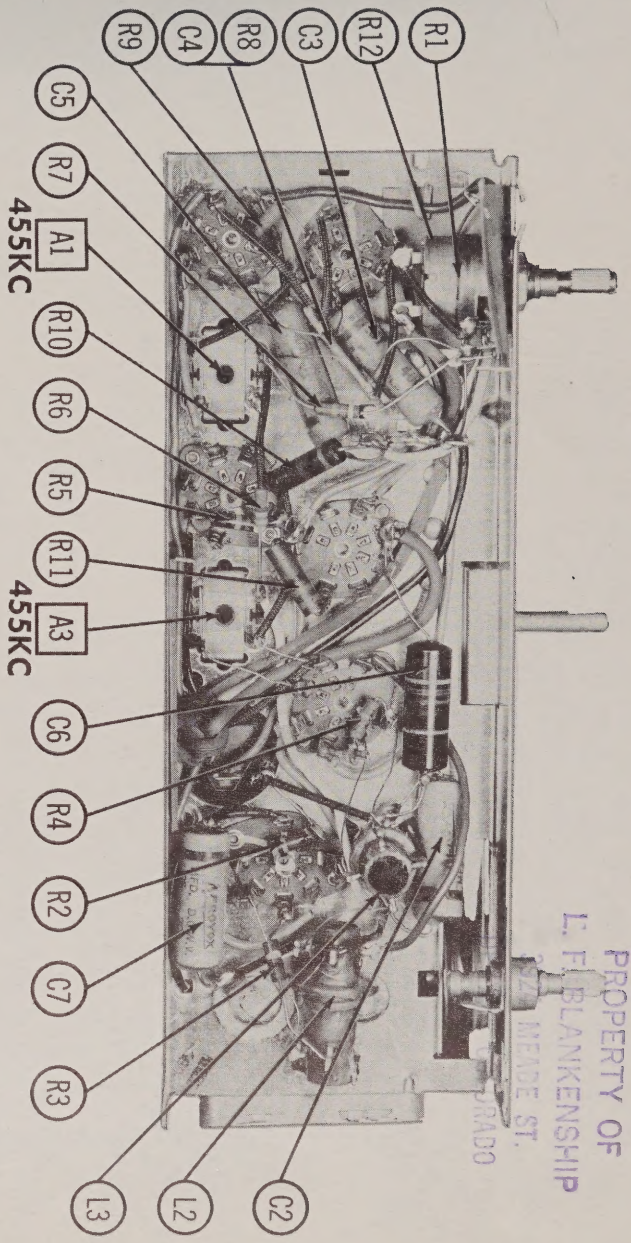
ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M1	Tuning Capacitor	V-11454-1	26-382MMF, 15-215MMF, 16-105MMF
	Cabinet	V-1220-5	Less Front Grille
	Grille	V-10894-3	
	Pointer	V-10893-3	
	Knob	V-10009-12	Off/On Volume, Tuning (2 Used)



SET 210 FOLDER 15

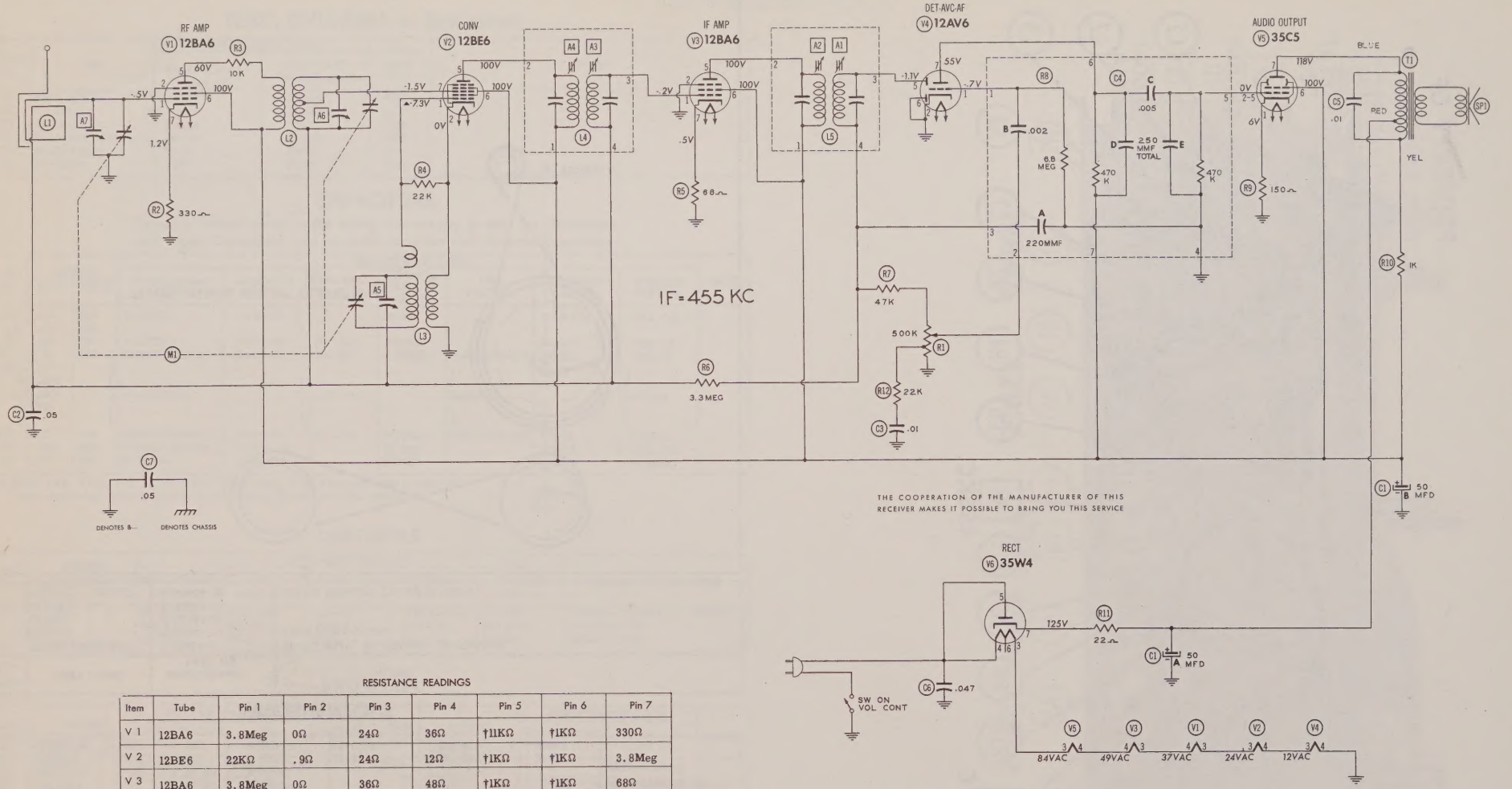
WESTINGHOUSE
MODEL H-393T6 (Ch. V-2182-2)

CHASSIS—BOTTOM VIEW



PROPERTY OF
L. F. BLANKENSHIP
[illegible] MEADE ST.
[illegible] ORADO

WESTINGHOUSE
MODEL H-393T6 (Ch. V-2182-2)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	3.8Meg	0Ω	24Ω	36Ω	†11KΩ	†1KΩ	330Ω
V 2	12BE6	22KΩ	.9Ω	24Ω	12Ω	†1KΩ	†1KΩ	3.8Meg
V 3	12BA6	3.8Meg	0Ω	36Ω	48Ω	†1KΩ	†1KΩ	68Ω
V 4	12AV6	6.8Meg	0Ω	12Ω	0Ω	500KΩ	0Ω	†470KΩ
V 5	35C5	150Ω	470KΩ	83Ω	48Ω	470KΩ	†1KΩ	†217Ω
V 6	35W4	†22Ω	INF	83Ω	118 Ω	118Ω	109Ω	700KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER .
† MEASURED FROM PIN OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

210-15

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.